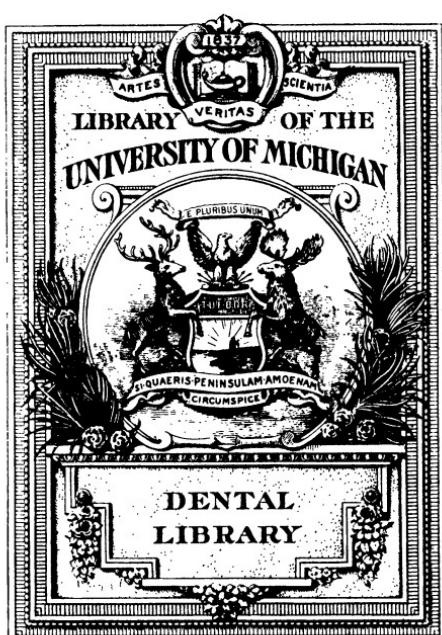
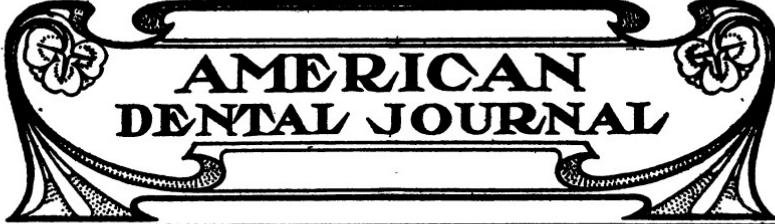


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# Listerine Tooth Powder

Tooth powders have long been empirically employed, chiefly as a mechanical agent for cleansing the teeth, and with little regard to their composition or chemical action. Many of the articles sold for this purpose contain ingredients prone to fermentative action in the mouth, such as orris root, starch, sugar, etc., and, in addition, pumice stone, cuttlefish bone, or other harmfully abrasive substances.

Listerine Tooth Powder, possessing neither of these objectionable qualities, very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouth-wash of Listerine, suitably diluted.

To dental practitioners of record, the manufacturers will be pleased to send a supply of samples of Listerine Tooth Powder for distribution to patients.

**Lambert Pharmacal Co.  
Saint Louis**



# OUR POST GRADUATE COURSE

## OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

*(Discussion of Some Incidents of Office Practice.)*

Several years ago a lady came to consult me about a condition of abscess of long standing at the end of a superior central incisor. She gave a history of its beginning, and stated that it had been treated by a dentist whom I was satisfied was well qualified to handle such cases.

There was evidence, I found, on the gum immediately over the end of the root, of an opening at one time of a sinus, but now sealed so that nothing exuded; nor could medicaments be pumped through by several means employed.

She told me that it had been under treatment for more than a year, dressings being applied and changed every few days, and the use of several well established remedies had been employed, but without results, as far as healing and elimination of soreness was concerned.

From the history she gave and my diagnosis, I concluded that some foreign substance had passed through the apical foramen; though course I realized that the sore condition might be due to absorption of a portion of the apical end of the root that left a rough and irritating surface.

However, my conclusion was to try to find and dislodge a foreign substance. I suspected a piece of cement with which the root had at one time been filled; or possibly a bit of broken broach. I remem-  
of course I realized that the sore condition might be due to absorption loose, and that I knew, might easily be pushed through, though the foramen was not unusually large.

My patient told me that the dentist who had been treating it was discouraged and quite willing to pass the case over to some one else. Feeling that he had thoroughly tried all usual means of treating, I

determined that my only chance of success was to try something extraordinary. I succeeded in opening and exploring the old sinus which was merely sealed at opening—not really healed. Even then I could not pump through any medicament.

I explained the situation to my patient, which she already pretty well understood, and I told her I proposed to put into the root of the tooth, some peroxide of hydrogen on cotton, and at once seal it in, and try and produce a condition at the end of that root that I hoped would result in reopening the sinus. With that freely open, so I could flow medicaments through, I felt that I would at least be one step nearer a solution of the trouble, with a prospect of healing it. I told her that what I would apply might and likely would produce what she had several times endured at intervals, and especially when the other dentist had inserted a root filling of gutta percha or cement—the oxychloride of zinc being held in considerable favor in those days for root filling by many practitioners. She understood that she might experience some discomfort and swelling as had been, possibly a little more intense, but I told her my hope was, to not only reopen the sinus freely, but to bring out the foreign substance I felt was the cause. I expected to succeed, and if I did I felt sure there would soon be an end to already long drawn out trouble.

She was readily willing to co-operate with me, and I advised her that if the sinus should open before she saw me—the following day—I wanted to see every thing that came away, and asked her to use a handkerchief or bit of cotton to collect the discharge, should it occur, and not let any part escape. I thought a small grain of cement might be the cause of the trouble and if it was I wanted to know if it came bered, too, that a bit of the cotton rolled on a broach sometimes works

There was considerable swelling during the night, accompanied away, or anything else.

arisen in the morning the break came, and quite a quantity of pus was discharged, all of which, realizing the importance, she collected and brought to me. Upon examination, I found what she had herself discovered, a very small pledget of twisted cotton, which, it was clear, had been the cause of the unyielding lame condition.

Upon opening the root canals, irrigation through the root and sinus was free and satisfactory, so much so that I did not hesitate to insert at once, after proper preparation and drying, a permanent root

filling of gutta percha, and had the pleasure in a few days to find all so well that a gold filling was inserted in the cavity.

Now, it may not be amiss to add that the successful handling of that case brought me, through that appreciative patient and her family, a long list of other nice patients.

But, as mentioned in a previous paper, there may be some serious consequences in the promiscuous use of peroxide of hydrogen; and particularly in its introduction into a pus or putrescent cavern without a very free opening. In the above case I deliberately sealed in a very small quantity into the root canal with the full intention of having it exercise its expansion properties in opening that fistulous tract that had, as one will see, previously demonstrated a line of least resistance through the alveolus to the surface. I felt quite sure it would follow that same course.

Now, had this case not been pretty persistently treated antiseptically by the previous operator, which, while it did not and could not cure, it is more than likely, in my estimation, that a carious or necrosed condition of the alveolus might have developed that would have called for more of a surgical operation.

This case is recited as an instance where the peroxide treatment proved to be a wise move, and everything worked out as desired; but this experience is not enough to warrant the advocacy of its use in all similar stubborn cases. It is recited for what it is worth, and each operator who may wish to profit by the suggestion must use his own reasoning and judgment as to probable or possible results. However, I am inclined to think that the minute quantity I employed—perhaps about one small drop—could not exert any very damaging force from expansion of chemical gases produced.

\* \* \*

In connection with this I will refer to peroxide of hydrogen or dioxogen as a very excellent test for putrescence in a root canal. After several treatments to bring about aseptic conditions, we frequently question as how complete our effort has been. One good test is to twist a little cotton on a broach and wipe out the root with it. Touch this cotton into a drop of peroxide of hydrogen on a glass slab. If with some discomfort, but she expected it, and shortly after she had pear. It must be understood that a fresh drop of the peroxide must be used in each test, if more than one is made. As long as there is

any decided bubbling it may generally be taken as not aseptic, or ready for the root filling. The extent of the bubbling, and the color of same in these tests, are pretty good indications of degrees of putrescence. Thus, if the bubbling is vigorous and darkly colored, or brown or slate colored, the indication is that it is far from being aseptic. As putrescent condition subsides, the foaming is lighter in color and less active.

And so the peroxide may be used as stated, with a good deal of satisfaction, to indicate the progress of recovery. But it must be borne in mind that a healthy serum will cause a little clear bubbling sometimes, which does not indicate any putrescence, necessarily.

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#### **EDUCATE YOUR PATIENTS.**

The spread of dental knowledge during the last twenty-five years has been accomplished largely by the conscientious dentist, but with all this labor, think how little the average person knows about the dental organs. Here is a portion of the code which should be emphasized, that our mission is not alone to prevent suffering and thus earn a livelihood, but we must be teachers as well. A large portion of our patients are receptive and are willing to accumulate a certain amount of useful information. Do not talk to them in uncertain terms or high-sounding phrases, but in the simple language that any one of intelligence can understand.—*C. A. Cheney, Dental Review.*

#### **TOOTH BRUSHES.**

If the dentists in the various cities would get together and decide upon a number of useful sizes and shapes of brushes, see to it that these were manufactured in large quantities, and placed on sale in at least one store in every city, then all dentists would be able to recommend the suitable brushes which different cases need. Is it just that our patients should be dependent upon advertisements or the druggist's advice in selecting weapons for this, our war against uncleanliness and disease of the oral cavity? Without good tools even a good workman may do poor work, so we must be sure that our patients are equipped with good tools.—*Grace Pearl Rogers, Summary.*

# Our Foreign Department

THOMAS L. LARSENEUR, D. D. S., Foreign Department Editor

## HYPNOTIC ANESTHESIA IN CONNECTION WITH DENTAL PRACTICE.\*

BY DR. EDMEND BOUCHARD, D. E. D. P.

(*Journal Odontologique de France*, Paris, August, 1909.)

Gentlemen, if there is a profession where hypnotism is of a great assistance, where suggestion is applied daily, unconsciously, it is true, it is in the dental practice. In fact, as a matter of proof, we have the old French saw: "*Menteur comme un arracheur de dents*" (he is a great liar). Now, gentlemen, we have there a proof of our unconscious suggestion upon the patient, as it is only after the operation is completed that he realizes the pain that was inflicted, and in many cases the patient is astonished himself that he had been persuaded of the contrary.

Since the law of 1892 has given us the right to use hypnotism in dental practice, and with all the good results which have followed its use, why should we not classify it with all the other local and general anesthetics?

Under hypnotic sleep, remarkable results have been attained in dental practice, and it is of the comparative value of hypnotism with other anesthetics that I shall speak of.

The cases which will be mentioned, are strictly exact and true, and these observations have been made before witnesses: In my office, at the Odontological Society of France, and also at the dental meeting of Angers, where request was made, that the value of hypnotic anesthesia should be studied by dentists with the same interest as all the other anesthetics.

It is not my desire to relate, at this meeting, the history of hypnotism, as authorities have preceded me on the subject. I will

\*Paper read before the Odontological Society of France.

confine myself to the application, results and advantages of hypnotic sleep applied to dental practice.

Let us now correct the false public idea that in order to be susceptible to hypnotic influence, one should be a victim of hysteria.

Everybody can be hypnotized, except idiots and degenerates; but let it be well understood, that the subject should give his full and willing consent. I will relate to you the words of Professor Bérillon, eminent director of the psychological school, on this subject.

*"The success of an hypnotic test, says he, is wholly dependent upon the agreement before hand, between the hypnotizing person and the subject."*

"This," says he, "does not follow that cases will not be found where a subject will place himself in a state similar to that of hypnotism. In instances, it will not be a case of experimental hypnotism but a case of incidental hypnotism and the will of the person who has brought on this condition will have no control upon the effects of inhibition which will be manifested."

As it has been stated previously, above all, the consent of the subject must be had; when this is attained, the hardest part of the experiment has been overcome.

The best way to obtain this is to demonstrate and prove that the process used are harmless.

*Harmless*, and I insist on this point, as it is the inducement of this sleep that is superior to all the other anesthetics known.

With most men under the influence of stimulants of the nervous system the sedative state (state of relaxation) which is absolutely necessary for hypnotism, cannot be obtained.

Therefore it is of a great importance that subjects to be hypnotized should come with a stomach free of alcoholic drinks, coffee, tea, tobacco, etc.

As a matter of fact, according to Professor Bérillon, it is only when you will have the certitude of not only the mental consent of your subject but also of the organic consent, and that you will have realized these two essential conditions that production of hypnotism can be obtained.

I will not detail to you the numerous advantages of hypnotism over all other anesthetics.

What are, in dental practice, the advantages and superiority of hypnotism?

Advantage of time;

Advantage of preparation;

It may be maintained for an unlimited period of time;

It has no counter-indication;

Absolutely harmless;

Results assured.

Supression of that fear patients have of the dentist, and of that agony generally caused by the use of the dental engine.

*Advantage of time:*—Given the patient is prepared and fully willing to be hypnotized. The time required to induce sleep varies from two to three minutes for operations, extractions, etc. Under this sleep I can perform my operation painlessly and without hemorrhage.

I will recall your attention later on this precious advantage: vaso-constriction in connection with hypnotism.

*Advantage of preparation:*—There is no need to sterilize, there is no display of apparatus to arouse the fear of the patient, no nausea, no sensation of suffocation or asphyxia which is known to all anesthetics. The patient is induced into sleep without notice of what is taking place.

*Unlimited time:*—No toxic effect whatsoever, no fear of syncope at any stage of the anesthesia, the patient falls asleep confident, peacefully, without any unpleasant sensation, and without the anguish that always accompany the administration of all general anesthetics. A peaceful and resting sleep is obtained, relaxation, stillness, and insensibility are obtained, in fact, all these are under the control of the operator or hypnotist. There is a period of suggestion, where after awakening of the subject, the operator may proceed with his work and no feeling be noticed by the patient; this has been successfully applied in cases of hypersensitive dentine.

*No counter indication:*—With patients to undergo an operation with the administration of a local or general anesthetic, it is customary to make an examination in such cases, and if any organic lesions are found, it is advisable to refer such cases to a physician and let him decide whether or not the anesthetic should be administered.

One must not forget that with certain lesions of the heart even cocaine is a very dangerous agent to administer. With hypnotism none of these precautions are necessary, in fact there are no counter-indications, no responsibility to be assumed on our part, no toxic agent to eliminate from the system.

*Results assured:*—My personal statistics which are increasing daily show that rebellious patients to the idea of being hypnotized, proved to be bad subjects, and in such cases I could not obtain hypnotism before they had been instructed as to its application and mode of action. But on the other hand, with patients who had previously been hypnotized, I experienced no trouble in inducing sleep. They came to me fully confident that no pain would be inflicted upon them.

I therefore think that there is quite a field for the dental profession in the study of hypnotism, and I can assure that the results obtained are without comparison with any of the other anesthetics.

Case No. 1. Young man, age 24; abscessed roots (6 year old upper right molar). It was suggested that he be hypnotized to which he gave his full consent. After a few minutes a sound sleep was obtained, under the influence of this sleep, he was told that the roots would be extracted, but that he would experience no pain, that all the sensibility of that region was removed, that no pain would be experienced and no hemorrhage would take place. The patient is under a complete state of muscular relaxation. After the operation the patient is awakened, he has felt nothing and has no hemorrhage, and delighted with this operation.

Case No. 2. Miss Alice X—, who was brought before the "Odontological Society of France," had an upper central incisor which was annoying her very much; diagnosis, necrosis of the pulp brought about by a filling inserted too close to the pulp. The tooth is extremely susceptible to touch; the examination is made by our colleagues, Mm. Lannois and Manteau. Sleep is induced by placing my fingers over her eyes. After suggestion, M. Lannois proceeds in opening the pulp chamber, all this without any sign of pain noticed from the patient. The suggestion of removing pain has been made only around the region of the central that was affected; accidentally, the burr which had heated touched the lower lips, the patient opened her eyes and cried: "You are burning my lips." The sleep was the same as stated above. I suggested that the sensitive

feeling would not return but a few minutes after the awakening, and that during that time the operation could be continued without pain. Everything is carried as suggested.

Case No. 3. This was a case of hypersensitive dentine, and I must say that I successfully excavated the cavity without causing the least pain to the patient who was well advanced in years.

These few cases are taken from a number of others which I have on record, and will demonstrate to you all the good dentistry derives from the use of hypnotism.

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#### A CASE OF REIMPLANTATION OF A SECOND MOLAR.

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BY DR. R. MONTES.

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(*Les Annales Dentaires, Paris.*)

Often the dental practitioner is called upon to extract a perfectly sound tooth because the patient cannot devote the necessary time for treatment or he is compelled to leave the city under short notice. Encouraged by his success in the reimplantation of single-rooted teeth, the author ventured the implantation of an upper left second molar with strongly diverging roots. This tooth *in situ* was affected by caries of the third degree, the pulp being infected. The canals disinfected with sulfuric acid, then with a 40 per cent. solution of formol, and filled with trioxymethylene paste. The chamber was sealed with gutta-percha. A month later the patient presented for final filling, not having experienced any trouble in mastication nor sensitiveness to heat or cold. The tooth was filled with amalgam, gutta-percha being used as root-canal filling.

Two weeks later the tooth became very sensitive to heat, and for fear of infection, the tooth was opened up once more; the canals, which showed no untoward symptoms, were disinfected again and sealed with gutta-percha. A month later a violent relapse occurred. Cautery proving to be of no avail and assistance, an infection of the roots or cysts at the apex being suspected, the tooth was extracted at the patient's request and reimplantation restored to the extremities of the roots which showed traces of cysts, especially the lingual one, was resected, and the suspicious portions scraped without injury to the sound ligament. After the canals had been enlarged with Gates

reamers, they were filled with gutta-percha up to the apex, and the cavity of the tooth was filled with amalgam and kept in a glass vessel with tepid water to which hydrogen dioxide was added. The alveolus was then washed out with warm water and the small hemorrhage stopped, and in spite of the diverging roots, the tooth after some trying and the application of some force, was pressed into place, which was indicated by the characteristic crepitating noise. Slight yet tolerable pain was felt during the night. Frequent washing of the mouth with hot water mixed with a solution of hydrogen dioxide was ordered.

Without suppuration or any other trouble the tooth remained loose in the mouth about a month, when it became so firm as to be indistinguishable from the other teeth, except for being a little less susceptible to percussion. Evidently the dental ligament which had remained intact adhered firmly to the maxilla.

The question arises how long will the tooth last? In the author's practice, some reimplanted teeth have lasted for seven or eight years and a reimplanted lower molar which had to be extracted, after patient, a reimplanted lower molar has remained solidly in the jaw now for nearly three years, showing but slight deviation outwardly, without disturbing the articulation.

The technique of this useful and interesting operation is still too young to permit of final conclusions as to the durability of implanted teeth.

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#### THE CORRECTION OF INVERSE ANTAGONISM.

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BY DR. A. SIFFRE.

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(*Revue Générale de l'Art Dentaire, Paris.*)

The correction of inverse antagonism, which is generally, though wrongly, called and termed retroversion, has been brought about by regulating appliances intended for two purposes—first, and principally, the elevation of the articulation, *i. e.* opening of the bite, and secondly, the forward movement of one of the several teeth.

Although the construction of these apparatus is simple enough, the author suggests a further simplification which yields perfect results, even in difficult and complicated cases.

Normally the mandible is held at a slight distance from the

maxilla, and the teeth are not in contact. In fact a muscular effort is needed to bring the teeth in contact during mastication and deglutition. Muscular contraction constitutes a pathological phenomenon, and the grinding of the teeth during sleep is only observed in nervous patients. It is therefore unnecessary to artificially open the bite, since it is open by nature, and basing on these correct deductions Dr. Stiffre has corrected inverse antagonism by a simple plate, without forcefully opening the bite.

This apparatus consists of a simple rubber plate, which at the point of contact with the tooth to be regulated has a reinforcement to which a curved wooden peg is fastened. As soon as the peg begins to push the tooth, it is displaced, and owing to the slight pain felt, the jaws are held apart consciously or unconsciously, day and night. As soon as the antagonism is corrected, the last peg, which has terminated the forward movement of the tooth, is removed, and has fulfilled its purpose.

By this method, only one apparatus needs to be constructed, and the time necessary for the completion of the regulation is not much longer than that required by the ordinary apparatuses for raising the articulation.

It is applicable to one or more teeth, and its action is equally powerful. The only inconvenience of the apparatus, which is to be worn day and night, is that the pegs must be renewed from time to time. With the aid of a curved spring fixed in the plate and ending in a straight stem which touches the tooth to be regulated, the inconvenience of the peg may be avoided, and the regulation accomplished without any trouble to parents or child.

Not every parent can bring his child often to the dentist, nor can the child leave school conveniently. The gentle and continuous action of this apparatus is of prime importance, and the operator must never try to gain time by augmenting the force of the regulating apparatus.

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#### WAX IMPRESSIONS FOR GOLD INLAYS.

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BY DR. J. VALDERRAMA.

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(*La Odontología*).

In cavities which present irregularities it is sometimes very difficult to secure a perfect wax impression without destroying the con-

tour of the edges. To obtain a perfect imprint of the sharp edges without any unnecessary loss of time the author suggests the following method: The cavity is prepared as usual, and coated with vaseline perfumed with a few drops of mint or wintergreen. If the cavity is approximal, the adjoining teeth are coated with vaseline in order to prevent the wax from adhering. The wax must be of the right consistency, because on this its usefulness greatly depends.

To prepare impression wax, rose-colored paraffin wax is mixed with equal parts of paraffin. This mixture is melted and filtered through paper or cotton. No oil should be employed as an insulating means between the cavity and the wax, because it will not entirely prevent the wax from sticking, and interferes with its plasticity. A pellet of this impression wax is pressed into the cavity, all the edges of the cavity are carefully covered, yet no effort is made to remove the excess or to smooth the wax.

After the wax is forced into place, articulation is obtained by having the patient bite on it. After it has hardened, the wax is removed and invested in plaster and talcum of equal parts, taking care that no bubbles are formed, and that the investment material covers those portions of the wax which represent the negative of the base and the edges of the cavity.

After the plaster has hardened, the excessive wax is trimmed with a suitable spatula down to the edges. This is the most delicate part of the operation, since the detail of the edges must be carefully preserved.

After the excess of wax is removed, the impression is polished with alcohol or chloroform, after which one may immediately proceed to cast the gold inlay. This method of taking impressions offers the advantage that an impression can be taken without molesting the patient, that the details are faithfully preserved, and that the model can be shaped so as to reproduce the missing tooth structure.

As an investment material the author recommends: Plaster, one part; pulverized silica, one part; pulverized asbestos, nine to ten parts; pulverized chalk, one to ten parts.—*Dental Cosmos*.

# ORIGINAL CONTRIBUTIONS

## TOOTHSOME TOPICS.

BY R. B. TULLER.

Pa's got a new mikeroscope.

It makes a dime look bigger'n a dollar.

But I can't see as it lets you into the nickel show but twiste just the same; an' onct when speshul.

Pa sez he can see Mars with it. I can see Mar's slipper without it—an' feel it too.

Say, that's a less'n in astronermy. It makes me see stars some times, an' when I'm not lookin' up, either.

I think pa has got cafuzzled some with his mikerscope. A mikerscope haint made to see stars with, unless you put the stars on the glass slide; but pa sez it is all the same, and so he tries to use the lenz to peruse the heavens.

Ma she sez, "Joel, why don't you git a patent onto it, if you can see stars with a mikerscope? In my 'pinion, you better keep that mikerscope away from your hed, er somebody 'll happen to look in the other end and see what a empty place you have inside yer punkin'."

Ma sez awfully karsastic things to pa, an' I don't allus think it is rite when pa mcens well and is trying to git wize.

Pa is a thinker an' a 'vestigator. He expects some day to hit on sumpen that will make the hull world set up an' take notis. I don't kno what it is an' he don't allus know; and' he fales a good menny times. But pa is persistalent an' don't never give up till he has to.

Now, 'bout that flyin' machine, I tolle you 'bout last time, he sez they all faile the first few times; but he's got a idee jest from his first failure. He sez we can lern jest as mutch an' more from failures as from not. He had a idee that he could just make gas as he wanted it to fill his b'loon bag on his back, an' he made jest anough for one shoot upwards an' a comdown in a naybor's back yard, an' he got the wurst of it as I tolle you; but he ain't discouraged—not pa.

"No, sir," sez pa, "that little 'sperience has lernt me sumpin that's goin' to leed to success. I'm workin' on it now." He sez to ma,

"You've seen a sky rocket go up, an' up, and' up, jest from a little fiz-powder in 'em? Well, if they had sum way of feedin' in the fiz-powder at the other end as fast as it burnt out, it would keep goin' on, an' on fer a long time. Now, that hull thing could be arranged so's to carry a man up an' forward with a riggin' he could steer with, an' wings an' parry shoots, an' all he's gotter do, with the machien I'm plannin' is to feed in the fiz-powder as needed, an' tend to his steerin'."

"Of course a feller will have to come down after awhile fer more powder. They all hav to do that. They can't keep on stayin' up ferever, but I'll bet you my machine will be the swiftest thing that ever happened." "Up an' down," sez ma.

Well, ma set an' listened, an' I could see she wuz layin' fer a good openin'; an' she said, "Yes, Joel, I hav observed the sizzlin' gorgus, firey sky rocket go up with such a tremendus s-w-i-s-s-h, an' look so dazzling an' purty fer a breet moment; an' then, perhaps, with a pop an' spray an' things to mark its highest hite, it begin to come down with all its fire an' fury gone; a holler blackened ole paper tube an' stick; an' she comes down swifter'n she went up an' strikes the erth with a dull thud, sumpen like you done awhile ago." "Sure," sez pa, "that's jest the way they does, because they ain't no head to gide 'em an' to keep feedin' the fule. That's where I'm goin' to shine, if I did fale onct. I'm goin' to be the human sky rocket; ony I hain't goin' to come down til I git ready, an' in my own way, 'cept when fule gits low. An' when I come down it will be like one of these ere thistle downs what you see a sailing so easy thro the air. Wright an' Curtiss an' Count Zippin won't be in it with *me*; an' I'll have all the crown heds of Urope an' America hob-nobbin' with me. An' I'll sell them machines for \$5,000\$ a piece as fast as I can hand 'em out. Ma, some day you'll be ridin' in your coche an' 4, as proud as a queen. I've got it all figgered out, an' I kno it will wurk." "Coche and 4," sez ma, "huh! What's the matter with a limerenze and chef-fonier (shaffer)?"

Now, *I* wood encourage pa when he gits so thuzed, but ma she jest sets thare as kahm as can be, and sez, "Well, don't git two frisk over it. You better go take a run now Joel, out on the prairie and wiggle yer ears an' eat thistles fer awhile. You may get run inter the pound; but when we git ye out you can cum back an' put in cement an' amalgum fillin's 'bout as good as before, sumpen which

you hain't been able to do sence you blew yer self with gazzoline over into that spit fire's back yard 'crost the alley."

Now what did she meen by pa wigglin' his ears an' eatin' thistles?

All pa sed wus, "Well, you married me didn't you? Looks like you liked the breed."

Wisht they'd talk so's I'd understand. What's that gotter do ennyway with flyin' machines. Me an' pa fer the flyer, you bet!

But ma she sez, "a angel on erth, walkin' 'round on foot, is a heap more good than a mock angel up in air, oppin' 'round fer a few seconds, and then hastily coming down rong end to, an' tryin' to collect axcident insurance of a poor but honest ole company."

#### IS PROPHYLAXIS WANING?

Now comes our great apostle of modern prophylaxis, Dr. D. D. Smith. And I want to take off my hat to this good man, and thank him for the good he has done to humanity. His ideas have perhaps excited more general interest and his methods have been adopted by a far greater number of dentists than have those of any other man, and, for a time at least, more good to the greatest number has been the result. But even now we find that the interest is lagging. Men have been looking for some easy way to cure Riggs' disease. Doctor Smith's idea of keeping the teeth clean seemed, at least, to promise an easy way. But practitioners are finding it not as easy as it seemed; and Doctor Smith's voice is becoming fainter and fainter amid the roar of porcelain fillings and gold inlays. It is the old story that has long repeated itself and will ever repeat itself until conditions radically change. It has become so fixed in our minds that the disease is incurable that many of us will listen to nothing else. A man may be ever so conscientious and may actually produce good results, yet we will not believe. We indifferently try what he advocates, fail, and throw it aside. We utterly fail to grasp the fact that the man must do something, 'that he must have some point that is of use, that he produces a result that is of use, that he produces a result that at least encourages him. This is a point to which I wish to call your attention, namely, that these men have something that in their hands produces some good results, and that if we can grasp that something and use it as they do, it will produce results for us; but if we fail to be able to use that something as he does, we must not conclude as he does, we must not conclude at once that this something is nothing.—*H. T. Stewart, Cosmos.*

## ABSTRACTS AND SELECTIONS.

### LAME TEETH.

BY R. OTTOLENGUI, M. D. S.

Toothache is the layman's term for any pain originating in or about the teeth, the most severe being pulpitis and acute alveolar abscess. The improper or unskilled treatment of either will leave a tooth in a condition from which it is chronically troublesome, periodically "sore"; this may be designated a "lame tooth." A correspondent asks three questions in this connection. His first inquiry reads as follows:

"What process of treatment will avoid soreness and tenderness of teeth used as piers in bridgework, after the bridge has been set?"

It will scarcely be the answer expected, to say that roots used as bridge piers should never be sore nor tender after the bridge is set; yet this is true, because no bridge should be permanently attached to roots until the operator is reasonably certain that no soreness or tenderness exists, or will ensue.

Such piers reach the dentist in one of two conditions: either (a) the pulp is alive or else (b) the pulp has previously died. In the latter case infection may or may not have resulted.

Where the pulp is alive, and presumably healthy, and the dentist intentionally devitalizes it in order to make proper use of the root as a bridge pier, he must under no conditions use arsenic, as this medicament in the past has been responsible for thousands of "lame" teeth. The pulp, therefore, should be removed under pressure anesthesia with cocaine. If this should fail it would be preferable to use nitrous oxide gas, or even ether, chloroform or somnoforme, rather than resort to arsenic. Indeed it is scarcely too much to say that arsenic no longer has a place in dental practice. In connection with cocaine anesthesia and the subsequent removal of the pulp, the strictest asepsis should be maintained. Upon removal of the pulp there is often a hemorrhage and this may occasionally be profuse. It should not be staunched, either by plugging with cotton, or by using adrenalin

or other styptics. Any such procedure but invites the formation of a blood clot beyond the apex, and this will account for the tenderness so often reported after the operation of removing living pulps. This blood clot must be absorbed before the tooth can be accounted safe for either filling or bridge, and, of course, during its presence there is danger of infection as such a clot affords fine pabulum for a germ culture.

In the presence of hemorrhage through a tooth root, it is important, therefore, to exhibit patience and even invite bleeding with warm douches and dry cotton tampons, rather than to attempt to dam it back. A root handled in this manner, with perfect asepsis, and provided that all the pulp is removed, will never become sore nor tender.

If the pulp has dried prior to the attempt to utilize the root as a bridge pier, of course it becomes essential to thoroughly cleanse and sterilize the canals, and if an abscess be present, to cure that before attempting to set a bridge. This is not taking into account the splinting of teeth affected by pyorrhea, such procedure being quite the opposite of what is here discussed. In such cases the bridging is done to support the affected roots and the roots are not being used to uphold a bridge.

The second question was: "What is the treatment when there is tenderness after setting a bridge?" The writer was alluding to roots from which living pulps have been intentionally removed. It has been explained above that such roots, properly treated prior to the bridging, will not become tender afterward. Where tenderness does ensue, therefore, the fault is either in the treatment of the root, or else in the bridge itself. Sometimes in assembling, if proper precautions be not taken, the bridge will be shortened by the contracting solder. This makes the bridge bind when setting it, and some operators force it on rather than remedy the defect. The best course is to cut the bridge in half, and resolder, taking precautions against shrinkage. But if the bridge is forced to place, it is evident that the undue stress upon the piers may cause one or both to become tender. But this is the same sort of tenderness which results from wedging for approximal fillings, and if the stress be not too severe the tenderness will pass away, the roots adjusting themselves to the new condition. It is essential, however, to be sure that the occlusion does not contribute to the irritation.

When the tenderness is not traceable to the binding of the bridge, nor to faulty occlusion, and it is known to be due to the pulp removal, the presence of a blood clot at the apex may be suspected. This may sometimes be alleviated by counter irritation, such as an application of capsicum, or of strong iodin (Churchill's). Iodin applied cataphoretically would be even better. Such treatment, however, to be of advantage must be severe enough to produce a blister, and this may cause considerable pain. For this morphine may be exhibited with advantage. But even this may fail, and infection may follow, in which event excision of the end of the root and repeated surgical dressing during healing is the only recourse, always supposing that the bridge can not be removed. The remedies for tenderness after setting a bridge only accentuate the necessity of having the piers absolutely safe before attaching the bridge.

The third question asked was: "What do you do with roots where canals are difficult or impossible of access?"

One of the greatest blunders prevalent among dentists is the attempt to treat multirooted teeth through small openings. Cavities should be so freely cut that ready and direct access may be obtained to all roots needing treatment. After this, even very attenuated canals may be thoroughly explored with patience, an assortment of reliable and very fine broaches, and that most valuable remedy, first suggested by Dr. Emille Schrier, kalium-natrium (sodium and potassium). The technique of using this preparation has been described many times, and its efficacy is so great that it is extraordinary that it is not more commonly utilized.—*Item of Interest.*

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#### ORAL SURGERY.

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BY DR. WM. E. CHENERY, BOSTON, MASS.

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Of late years much attention has been given to mouth-breathing. Its effects have been studied not only by the rhinologist but by the dentist, and it has been justly found to be the wide-open door to many diseases.

To the dentist, persistent mouth-breathing means in adolescence deformed dental arch and irregular teeth, the opportunity of har-

boring multitudes of bacteria favoring the people's disease—dental caries—and inviting tuberculosis and gastric disorders.

The rhinologist thinks of the perverted air-current and its bad effects. The inspired air in passing through the normal nose is strained from dust and bacteria, is warmed and moistened, and after having been thus purified, is prepared for entering the trachea and lungs without causing irritation. This is very imperfectly done when the air passes through the mouth. Persistent mouth-breathing causes dulled sense of smell and taste, interference with hearing and often deafness, changes in the quality of the voice, and frequently catarrhal conditions. Lack of drainage and ventilation of the nose also means increased irritation and opportunity for infection. There is also interference with proper oxygenation. In fact, good health and facial beauty demand a normal nose rightly used at all times. The most frequent causes of mouth-breathing are as follows: (1) adenoids, (2) enlarged tonsils, (3) deviated septa, (4) hypertrophied turbinates, and (5) polypi; and we should always remember habit as a cause, if these obstructions have been removed. I believe all dentists should have a good working knowledge of these conditions, and a closer relationship between dentist and rhinologist is desirable. Today we shall consider adenoids, and tomorrow the other subjects referred to.

In my clinic at the Boston Dispensary I have recently examined the records of 3,000 children under fifteen, and I find the book diagnosis entered in nearly 65 per cent to be adenoids or adenoids and enlarged tonsils. Ballenger says it has been estimated that adenoids are present in children otherwise normal in from one to nine per cent of the cases examined. Sill says 20 to 25 per cent of children in his general clinic have adenoids or have had them removed. In deaf-mutes the percentage is much larger—50 to 75 per cent. Seventy-five per cent of ear troubles are due to adenoids. Kyle says that 90 per cent of patients having adenoids have some degree of deafness. Woakes says 95 per cent. Dench that more than half show trouble with the ear. In a series of 120 cases, twenty-six had lung troubles.

It is estimated that 84 per cent of chronic nasal diseases are due to adenoids. According to Wells, adenoids constitute 88 per cent of all affections of the vault of the pharynx and 25 per cent of all diseases of the upper throat, generally including the fauces. Faught states that the high contracted arch and respiratory obstruction are coincident in about 43 per cent of the cases. I feel sure

that if a more careful examination were made this would be found in nearly all the cases.

The cause of respiratory obstruction which leads to mouth breathing in children and to irregular dentition is pre-eminently adenoids.

In 1876, Joseph Meyer, of Copenhagen, first described this condition, and to him the world owes much for improved health and longevity.

Holt says, speaking of adenoids: "It is a very common condition and one very much neglected by the general practitioner. It is the source of more discomfort and the origin of more minor ailments than almost any other pathological condition in children.

Adenoids are hypertropied lymph glands situated at the upper and posterior part of the naso-pharynx or, as we often say, the vault of the pharynx. Lymphoid tissue should normally exist in the post-nasal space, but by irritation, inflammation, and infection this velvety tissue becomes chronically enlarged and so materially obstructs the normal air-current. The smaller the naso-pharynx the more it obstructs if hypertrophied. At the sides of the vault are the internal openings of the Eustachian tubes, and just posterior the fossæ of Rosenmuller are situated. Adenoids often extend into this space and by closer relationship become a great source of danger to the Eustachian tubes and the ears. Heredity and climate seem to have little effect as a cure for adenoids. The family nose may be a factor. Sex makes no difference. Scheppegræll reports 6½ per cent of negroes in the total cases of adenoids in his clinic. The negro has broad, open nostrils, and therefore he has less actual obstruction from adenoids.

The presence of adenoids can often be traced to an attack of influenza, scarlet fever, measles, or some other of the children's diseases. Infection of the lymphoid and epithelial tissue is more apt to occur in childhood, for it is soft and friable and therefore susceptible. Adenoids may be found soon after birth. The period in which they are most frequently found is from three to twelve years. There is a tendency for atrophy to occur in adolescence at about fifteen, but this is by no means to be depended upon, as I have often operated on adults, and recently on a man of forty-two with large, soft adenoids.

## SYMPTOMS.

We may have snuffles, frequent head colds, requiring mouth-breathing, which is usually noisy; sleep is restless, often night terrors and enuresis are associated. With development we find the narrow, pinched face and slit-like nostril, the alœ collapsing from non-use; the lips are parted, the upper lip becomes foreshortened and the upper central incisors are shown with a tendency to crowd together or overlap with the V-shaped instead of the dome-shaped arch, and consequently with dental irregularity. The bridge of the nose thickens and there is a general listless, stupid expression to the face. Earache and dullness of hearing are frequent. Aprosexia or inability to learn or fix the attention is common. The child is apt to be pale, under-developed, narrow-chested, or with actual chicken-breast. Epilepsy and chorea are often brought on by the presence of adenoids.

Clinical observation shows that if a child is going to have adenoids he will have them before eight years of age; between five and eight is the most prevalent period, and this is the time when they do the most harm in disturbing the second dentition.

There is no use in temporizing with medicine or waiting, because there is a tendency to atrophy at the age of fifteen. Irreparable harm may be done, and certainly nothing is gained. Operation is advisable in all cases where adenoids cause interference with nasal respiration, and especially if the ears are affected. An operation should be made early, before eight years. Occasionally the adenoids recur, but if a thorough operation is performed, and the sides of the fossæ of Rosenmuller are thoroughly curetted, recurrence is rare. Large tonsils should be removed at the same operation, usually before the adenoids.

There is a tendency to refer cases of irregular teeth to the orthodontist. The busy practitioner has no time for orthodontia. This is all right when the irregularities are pronounced and need much attention, but this is an age of preventive medicine, and whenever irregularities is due to mouth-breathing, it can and should be avoided. Parents are learning the necessity of caring for children's teeth early, and it is the dentist more than the family physician who is responsible for the form of the mouth and face, and for the proper eruption of the teeth during the plastic stage—seven to fourteen—when the bony framework of the face is easily moulded. In the deciduous dentition irregular teeth are rarely found, and the first

permanent molars are generally erupted regularly, but with the second dentition the trouble generally begins. The first molars should be preserved as long as possible. The dentist should see the patient early, and should detect the presence of that which will cause trouble in a few years, and advise operation. If any obstruction to nasal breathing is removed early, and the mouth-breathing habit is corrected, the superior maxillary bones will develop as they should, the arch will be dome-shaped, the teeth regular, and the occlusion usually perfect. Thumb-sucking and rubber nipples should never be allowed.

Remember the time for operating in order to avoid any deformity is during the plastic stage of the bones of the face. Mouth-breathing becomes almost a necessity even though the obstruction may be removed after the facial bones are molded rigidly into the high V-shaped arch. The danger from the operation in the hands of a skilled operator is very small when compared with the improvement in health. Ether is by far the safest anesthetic. The position for operating depends on the operator.

Finally, let me lay down this rule: Any condition in the nose or upper throat which interferes with the proper passage of air through the nose is a menace to good health. Ventilation and drainage of the upper air passages must be maintained at all times. A patient is never too young for correction of bad habits, but often too old. Bad habits mean mouth-breathing, which is the cause of the vast majority of dental irregularities. By early removing the adenoid or nasal obstruction—before six or eight—making possible the correction of the mouth-breathing habit, the need of orthodontia will be largely avoided, and the work will be better and more easily done. The health of the patient will be improved, his power of resistance will be increased, and his life will be prolonged.—*Dental Cosmos*.

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#### AN IDEAL BICUSPID OR MOLAR CROWN.

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GEORGE S. SCHLEGEL, D. D. S., READING, PA.

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An ideal artificial crown is one that possesses all the qualifications of its natural predecessor. In fact, the artificial substitute cannot decay, can be easily repaired if broken, and very often makes a better appearance than the natural tooth, when the latter is affected

with atrophy of the enamel, discolorations, and partial fractures. In order that I am not misunderstood, I wish to inform my readers that a tooth should not be crowned, unless it cannot possibly be repaired with some permanent filling material suited to the class and position of cavity or cavities.

The crown I wish to describe is made possible by the application of the principle of casting gold under pressure. The method can be used for any tooth in the mouth, but is especially adapted for bicuspids and molars. No ethical dentists should place a gold crown on the oral teeth, but bicuspids and molars are crowned by them, with the hollow shell crown, because the repertoire of crowns used to date lacked one that possessed both the necessary strength and esthetic qualities. I will point out the value of this crown to others now commonly used by comparison at the conclusion of this article.

In order to give you a clear conception of this method, I will describe how to make a superior first bicuspid crown:

The proper preparation of the root is essential for the proper adaptation of the crown as for any other crown. The root should be filled with red guttapercha points, which serve as a guide in reaming the root canals, the little red spot indicating the direction of the root. The diameter of the canals should be enlarged in proportion to the diameter of the root. I use No. 16 to 20 gauge iridio-platinum wire in the roots.

The next step is to cut down the root flush with the gum line. Then bevel root on the buccal side, and palatal side to about one m. m. below the free margin of the gum. Take a No. 5 or 6 bur to countersink opening to the reamed root canal to the depth of 1½ m. m. I insert iridio-platinum wire into each canal, cut flesh with surface of root, and remove to bracket table for future use. This completes the root preparation.

The next step is the selection of a porcelain detachable crown of any make desired, but of such a size and color that will conform to the case. If necessary to grind to occlusion, grind the occlusal surface; the reasons for this I will point out later.

Now take a piece of inlay wax, and after lubricating the inside of the opening of the artificial crown with a little sweet oil or glycerine, press the wax, which was previously warmed, into the opening of the tooth. Withdraw to see if the undercuts in the tooth

interfere with proper removal, and if they do, correct the fault. Return wax to crown, and trim approximately. Warm slightly and press crown with wax to the root. Note the condition of occlusion, position in arch, etc., then chill with iced water and remove. Note the opening to the canals by the elevation in the wax. Heat the iridio-platinum pins previously fitted in the roots, and place in approximal position in wax. Return to root for final adjustment. Be sure that all the wax is hidden beneath the gum. Chill again, remove carefully from root, then remove wax from the crown. Carefully insert a sprue wire at the end of the wax with pins, which touches the remotest part of the opening in the artificial crown. Invest and cast according to any of the methods used in casting gold inlays. Cement crown on cast base, and then cement the crown and base to place.

This gives you a crown that is perfectly adapted, esthetic, durable and easy to repair. The reason for grinding the occlusal surface is obvious from the fact that repairs would be easier if a record is kept of the number of the mould used, then a tooth of the same mould will fit the case without any grinding at the gum line.

It is my firm conviction, gained from actual experience with the insertion of these crowns for a period of over a year, that they are ideal. They are better than a gold crown for esthetic reasons. Better than a Richmond crown because in this ideal crown no band is needed, for bands are an abomination at best, and unless a Steele's Detachable Facing is used, the color is far from satisfactory. Again, gold tips are unsightly. Better than a Logan crown, because it is very often difficult to adapt to the root. Again, the leverage on the pins is very great, and often ends in the splitting of the roots. Better than a porcelain or platinum jacket crown, because either is liable to fracture, and difficult to repair.—*Record.*

**THE PERIPHERAL CAUSES OF TRI-FACIAL NEURALGIA  
AND ITS SURGICAL TREATMENT.\***

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BY TRUMAN W. BROPHY, M.D., D.D.S., CHICAGO.

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*Mr. President and Gentlemen—*

The title of this paper implies that I am to point out to you the causes of trigeminal neuralgia which originates in the terminal branches of the fifth pair of nerves.

The order of frequency of the occurrence of neuralgia in the three divisions of the fifth nerve are:

- 1st. The Inferior Maxillary.
- 2d. Infraorbital.
- 3d. The Supraorbital.

The real cause of tri-facial neuralgia, unless it is induced by local irritants, is not understood. We know that neuralgia is a sequel of certain systemic disturbances, such as malaria, syphilis, anaemia and other conditions which lower the vital forces, but we have yet to learn the pathogenic changes, if any, that take place in the structure of a nerve.

A statement was made by Dr. Austin Flint, over forty years ago, namely: "All that can be said of the pathological character of tri-facial neuralgia is that it consists in a perversion of sensibility." This statement is in accord with the view of many of our most scientific neurologists of the present time.

It is only just to those holding this view to state that all recognize that local irritants may induce neuralgia.

I believe the exciting cause of trigeminal neuralgia in nearly all cases is *local irritation*, and I further believe that in the greater number of cases in which local irritants are not pointed out, they exist, but the diagnostician fails to discover them.

The frequency of trigeminal neuralgia is due to the exposure of the terminal branches to injury from external causes, and to irritants in direct contact with the branches of the nerves. To blows, falls, exposure to extreme cold, etc., we may trace the inception of facial neuralgia, but its most common cause is disturbances resulting from dental lesions.

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\*Read before the Academy of Stomatology, Philadelphia, February 19, 1909.

Diseases of the human teeth are more prevalent than any other diseases known to mankind. Nearly every one has suffered from some form of tooth pain, and innumerable patients are suffering from diseases of dental origin for whom a diagnosis has never been correctly made. Irritation of the organic matter of a tooth in cases where the gums have been absorbed, and in which the neck of the tooth has been exposed above the enamel, is a fruitful cause of trigeminal neuralgia. Pulpitis, pericementitis, excrementosis crowded irregular dentures, contracted maxillary arches, partial calcification of tooth pulps, semi-devitalized pulps, those in which the pulp tissue in the canal of one tooth is vital, while in the other or others in the same tooth we find little or no vitality, pulp nodules, fractures of the alveolar processes causing spiculae of bone to come in contact with and irritate the nerve, cicatricial tissue which by contracting the soft parts adjacent to the nerve causes tension or pressure, and consequently pain; material which in filling tooth roots has been forced through their canals into the tissues beyond; artificial dentures improperly adapted to the alveolar ridges, and which exert pressure on the terminal branches of the inferior maxillary and anterior palatine nerves, thus causing pain; dento-alveolar abscesses, the pus from which often finds its way into the inferior maxillary canal, and non-erupted, malposed teeth, not infrequently cause pain by making direct pressure on a nerve. Tumors and cysts embracing the nerve or pressing upon it may induce neuralgia. Metal fillings in contact with sensitive dentin and fillings of gold and amalgam, which come in contact, thus causing electric shocks, often cause intense neuralgic pain.

In an address delivered at Madrid, Spain, April, 1903, by myself as president of the International Commission of Education, among the statistics given covering all countries on the subject, appear a table of facts regarding the condition of the Teutonic race in Northern Germany. The school children of nineteen towns were examined. The number examined was 9,725. Ninety-five per cent showed dental caries; 372 showed anomalies of various character, including hair-lip, cleft-palate, irregularities of teeth, V-shaped jaws, etc.

The carefully compiled German statistics fairly represent the conditions I found in other countries. It is apparent to us that 95 percent of the people everywhere are suffering from diseases of the

teeth; therefore, I do not hesitate to assert that trigeminal neuralgia is induced more frequently by irritation set up by some form of odontalgia than all other factors named.

#### DIAGNOSIS.

To make a diagnosis of trigeminal neuralgia it is necessary:

1st. To know the patient's occupation, environment, etc. As to whether he has been exposed to the toxic action of the fumes of phosphorus, mercury or any other influence that might lower his vitality.

2d. To question the patient as to the length of time he has been suffering, and as to the location, character and periods of pain. As to how often the paroxysms come, their cause and duration.

3d. To examine the patient carefully with a view to acquiring all the information possible as to his general physical condition. Has he been a sufferer from specific disease, malaria or lead poisoning? What is his mental condition? Is he neurotic? Has he nephritis or any other malady, the sequel of which might be sepsis lowering the tone of the nervous system.

4th. To make a careful ocular and digital examination of the parts, especially at the point of origin of the pain. The teeth by the use of a mouth mirror and fine exploring instruments should be most carefully examined on every surface, even beneath the margin of the gums. The history of the eruption of the denture should be learned if possible, and the absence of any teeth should be carefully noted and the date when these teeth were lost ascertained, with a view of determining whether the advent of the neuralgia and the extraction of the teeth was simultaneous. If so, the nerve may have been injured in the act of extracting the teeth, thus inducing the neuralgia. Sometimes small spiculae of bone are forced into the nerve trunk, thus becoming an irritant. Moreover, the absence of a tooth may lead to the discovery of a non-erupted tooth which may be pressing upon a nerve and causing pain. When the finger is carried along the buccal surface of the mandible from the cuspid tooth backward, there will be observed when a little pressure is made opposite the second bicuspid tooth and just below the point where the mucous membrane folds upon itself, a slight elevation. This is the inferior maxillary nerve at its exit from the mental foramen. If, in this nerve we have neuralgia,

the pressure of the finger will frequently excite a paroxysm of pain. The same results will follow pressure over the infraorbital and supraorbital foramen. In many of these cases there will be an hypertrophy of the nerve which may be distinctly felt.

In such cases I have often found the nerve five or six times larger than the normal size outside the mental foramen, while within the bony canal it was constricted, and hence the pain. After manipulating digitally the tissues in the region of the terminal branches of the fifth pair of nerves, we note carefully our findings, after which we make use of the most valuable and reliable means at our command with which to discover otherwise invisible and untraceable factors so often the centers of irritation from which neuralgia has its origin. I refer to the most valuable adjunct to the diagnostician, the Roentgen Ray.

Many obscure and hitherto unknown causes of neuralgia have, in the light of this most positive agent, been placed clearly before our vision. Many cases of neuralgia which were formerly attributed to systemic disturbances are now by use of the X-Ray clearly seen, and most certainly known to be the result of a local irritant, which, when removed, the pain will be terminated.

#### SURGICAL TREATMENT.

The treatment of tri-facial neuralgia by surgical procedure should not be hastily resorted to. Let it be done only after a careful diagnosis has been made. Moreover, internal medication should be employed when indicated. If the diagnosis points out a local irritant as the cause, this irritant should be removed. I do not mean that the teeth should be removed, but the diseases of the teeth, if any, should be cured, thus removing the source of irritation. The general extraction of teeth has too often been resorted to without a knowledge as to whether they were abnormal or otherwise. They have been extracted in the hope that by some chance the patient would be relieved. In most instances extraction of teeth for the treatment of neuralgia is not only useless, but the injury to the patient is irreparable. The time is past when the indiscriminate extraction of teeth can be resorted to with the vague idea that a pain can be arrested, the cause of which is not understood. There are but few incurable diseases of the teeth.

*Internal Medication.*—The administration of drugs is, with few

exceptions, of little or no value. Narcotics will control pain temporarily, but they do not cure. If the patient requires treatment for specific disease, indigestion, genito-urinary disease or any other malady, we should, of course, employ it. Tonics are often indicated, but of far more value is fresh air, sunshine, exercise in the open and proper diet.

It is customary when operating on the maxillary bones, or in the performance of any operations within the mouth, when of considerable magnitude, to make external incisions to gain access to, and to obtain a full view of, the field of operation. I hold that these external incisions, followed as they are by the formation of scars, are, in a large majority of the cases in which they are made, wholly unnecessary. For example, a patient suffering from persistent neuralgia of the second or third division of the fifth pair of nerves, having undergone medication extending over a period of many months with only temporary relief, is taken by his physician to a surgeon for diagnosis and treatment. The surgeon decides that a nerve lesion exists, and that an operation is required by which to cure the patient. An external incision is made in accordance with the location of the lesion. If of the inferior nerve, the incision is made along the border of the jaw, the tissues are reflected up so as to expose the external surface of the inferior maxillary bone, a hammer, mallet and chisel are made use of, the bone is chiseled away so as to expose the inferior dental canal, and the nerve removed. A saw is sometimes employed instead of a chisel for the purpose of removing the external layer of bone covering the canal. The wound is closed by suturing, and the patient is cared for antiseptically until the wound heals.

These external incisions are wholly unnecessary, as the operation may be successfully performed within the mouth, proceeding as follows:

A small incision should be made downward through the mucous membrane to the mental foramen, so that the canal may be entered with a silver probe; then a drill after the form of Gates' dental root-canal drill, exaggerated in size, may be carried into the canal, and the contents thoroughly removed.

In order that the nerve may not redevelop, as it is inclined to do the canal may be drilled out so as to freshen the surface of the bone, thus causing an exudate to take place from the freshened bony sur-

face, and the consequent filling of the canal with bony tissue. Experience has taught us, however, that the canal does not always fill with osseous tissue, and the nerves will be reproduced in certain cases. Gutta-percha may be used, and the inferior maxillary completely filled.

I am of the opinion that there is no more reason for making an external incision for the removal of an inferior dental nerve within the substance of the maxillary bone than there would be to make an external incision through the cheek to gain access to the third molar tooth for the purpose of entering the pulp chamber with a view to removing the pulp.

Abnormal conditions of the second division of the fifth pair of nerves, or the infra-orbital nerve, frequently requires surgical operations for their cure. It has been customary in performing these operations to make external incisions for the purpose of entering the infra-orbital foramen to make exsections of the nerve. I have found that equally good results may be obtained by raising the cheek and making an incision over the cuspid tooth, dissecting up the soft parts, seizing the nerve with a tenaculum as it makes its exit from the infra-orbital foramen, carefully dissecting out its branches distributed to the nose, lips and cheek, then increasing the size of the infra-orbital canal by means of a drill, seizing the nerve, drawing it forward, and dividing it, will accomplish the same end that may be gained by making an external incision. In operating on the supra-orbital branch, an incision made just beneath the eyebrow will be required to expose the nerve.

The following letter written by that distinguished surgeon, the late Prof. Edmund Andrews, A.M., M.D., LL.D., of the Northwestern University Medical School of Chicago, addressed to me, enters into an explanation why pain, though completely arrested by operation, may recur within a period of two years, and how finally it may be cured:

"CHICAGO, March 4, 1902.

"PROF. TRUMAN W. BROPHY.

"*My Dear Sir*—In reading your interesting clinic on Trigeminal Neuralgia I am not clear that I understand fully the late doctrine about the innervation of the tooth direct from a plexus surrounding the root, and not from a dental branch from the fifth pair. Do the

supporters of this opinion hold that the plexus derives its sensation from a connection with the fifth pair, or is it believed to be an offshoot from the sympathetic system, like the principal nerves of the digestive system, etc?

"What is the accepted opinion about this?

"Yours most truly,

"EDMUND ANDREWS.

"P. S.—I have found, much to my surprise, that a case could, for a year or two, by an incision or avulsion after an operation through the ramus, yet if it relapses, the cure can be repeated by opening in the same spot, detaching the circular cicatrix, closing the trephine hole by cutting around its edges, and twisting it forcibly out, though no trace of the old stump may be found. I have operated several times in the same spot, with a year or two of success each time. I have found the plan to be of considerable value in practice, and weak, old patients seem to feel no shock, probably because the incisions are done in cicatrical tissue, which has very little vasulatory, or nerve supply. I don't see any reason in it unless this may be true. The cicatrix may be supposed to be attached in its deeper apex to the stump of the nerve, and in twisting it out it may effect a nerve stretching.

"I have excised the Gasserian ganglion five times, but other surgeons, as well as myself, think less favorably of it than formerly. This matter of secondary operations, by twisting out the old cicatrices, is of importance, though it looks at first glance unreasonable. Working in the old cicatrix is eminently free from shock and hemorrhage. Relapses after either primary or secondary operations are very generally, or at least often, much milder than the original disease; some are permanent cures.—E. A."

In answer to Prof. Andrews' question as to how the tooth pulp receives its nerve supply and nutrition, I stated that the nerve supply is from the fifth pair, although a nerve branch does not proceed directly from the trunk into the tooth canal, as works on anatomy teach, but the branches given off from the trunk are distributed to the bony septum between the roots, and minute branches are distributed to the pericementum and enter the foramen to be distributed to the pulp. After the removal of the terminal branch of the fifth nerve there will follow a period of anaesthesia. Later, however, this sensation will be restored in the parts, either through small branches of the sympathetic

system or possibly by vicarious sensation, is an explanation of the return of nerve function in the part.

The past few years the attention of the profession has been called to the use of injections of osmic acid into the substance of the nerve, and more recently deep injections of alcohol. These agents have been most valuable in arresting pain. Their action, I believe, is to stretch the nerve tissue into which the fluid is injected, thus accomplishing what was done long ago, to wit: Their pressure stretches these nerves, which are not easy of access, and cannot, therefore, be so well stretched in any other way. I believe a saline solution or sterile water deeply injected would be equally efficient in arresting pain. In nearly all cases I would expect neuralgia to recur.

I have previously stated that neuralgia is an abnormal condition of nerves, the origin of which it is frankly admitted by distinguished neurologists they do not understand. By some authors it is said to be due to neuritis, inflammation of the nerve sheath followed by hypertrophy or atrophy of the nerve. Such conditions no doubt are met with, the exciting cause of which remains unknown.

Having pointed out many of the peripheral causes of trigeminal neuralgia, I wish to occupy a little time in pointing out some essential measures which must no longer be overlooked by the medical profession.

What are the most common causes of facial neuralgia? The question may be briefly answered in two words, *local irritants*.

And the local irritants which are the exciting causes of facial neuralgia are usually developed as the result of carelessness or lack of appreciation of the importance and value of oral prophylaxis.

Mr. President and gentlemen, having been since 1880 a professor in one of America's most highly esteemed medical colleges, I feel I can without bias state that I know the shortcomings in the courses of study in medicine.

No doubt many present will remember that the Committee on Colleges of the American Medical Association, at its annual meeting held at Atlantic City in 1907, reported, in substance, that the courses of instruction in fifty per cent of the medical colleges of the United States were so incomplete and unsatisfactory and that the colleges were so poorly equipped with laboratories, apparatus, etc., that the best interests of medical education would be subserved if these col-

leges were closed. As to whether this committee's report was based on facts obtained after most careful investigation, I do not know. It is safe to assume that the committee acted on good authority.

Medicine is said to be "the healing art in all its branches." This definition is, I believe, correct. I believe the schools of medicine *should teach* "the healing art in all its branches." My duties as president of the International Commission of Education of the International Dental Federation has made me a close student of the courses of study in the medical and dental colleges of the world, and while I cannot confirm or deny the declaration of the Committee on Colleges of the American Medical Association, that one-half of these medical schools are not well qualified to teach, it is too apparent to require argument that even the medical colleges of excellent repute, not only at home, but abroad, with very few exceptions, teach "the healing art in all its branches." The difficulty lies in the fact that each professor in a medical college is a specialist, even the professor of surgery is a specialist, as he specializes on what the ophthalmologist, aurist, laryngologist, rhynologist, gynaecologist and many others leave for him to do, while the professor of medicine is an internal medicine specialist. Those specialists are so absorbed in their work that the other departments receive but little of their attention, consequently the diseases and injuries of the teeth, mouth and jaws, together with the many diseases having origin in the mouth, the medical student has no opportunity to learn. Is it the student's fault that after graduating and entering upon practice that he is incompetent to make a differential diagnosis between sensitive dentin, a pulpitis, a pericementitis, a maxillary osteitis, a dento-alveolar abscess or any of the numerous pathological conditions which may manifest themselves in the form of neuralgia or glandular affections or empyema of the antrum, defects of vision, hearing, tempero-maxillary arthritis, caries and necrosis of bones, sinuses, general infection, etc.? Is it the fault of the medical student that he has not learned dental pathology and become familiar with a class of diseases more prevalent and causing distress to a greater number of people than any other class of diseases known to mankind? No! The fault lies with the medical faculty, and the great oversight will be remedied only when the faculty awakens to its full duty and broadens the curriculum of the medical school by establishing a chair in dental pathology with all the breadth and

significance the term implies. (Not to teach the art of dentistry; this could not be done without adding two or three years to the medical course, and equipping the college and providing a dental faculty.) Having done this, the medical faculty will have taken an advance step in preparing students to more successfully alleviate the suffering of mankind, and the profession will more nearly fulfill the requirements of the definition in endeavoring to make medicine "the healing art in all its branches." In this connection I wish to state that the greatest defects in the courses of instruction in many dental colleges at the present time is the lack of thorough work in the department of pathology.—*Dental Brief.*

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### DIET AS A PROPHYLACTIC AND THERAPEUTIC.\*

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BY H. W. WILEY, M.D., WASHINGTON, D. C.

CHIEF CHEMIST, BUREAU CHEMISTRY, DEPARTMENT OF AGRICULTURE.

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There is an increasing belief in the medical profession, and this belief is founded on substantial evidence, that diet is an important factor in the production and cure of disease. Both the words "production" and "cure" are used here in their ordinary sense, meaning as aids to, or favorable to, and not as possessing specific properties of production or effacement. By reason of the provisions of the Food and Drugs Act the term "cure" is now somewhat restricted in its applications. The common practice of advertisers of patent or proprietary medicines in the past was to advertise them as a "cure" or "sure cure" or "infallible cure" for various diseases, and also to place similar statements on the labels. When the law was enacted forbidding the use of a statement which was false or misleading in any particular, and especially since the courts have judged that the word "cure" in the strict sense of that term, may not be applied to a remedy or medicine, less use is made of the word. For this reason I have used the term in the restricted sense of establishing favorable conditions whereby the natural removal of the disease might take place, rather than as exerting a specific influence in the removal of the disease and the restoration of the diseased organ to a state of health. I propose to

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\*Read, by invitation, at a meeting of the American Therapeutical Society, New Haven, Conn., May 6 to 8, 1909.

eliminate from the present discussion the well-known effects of adulterated or debased foods in the promotion of disease, and shall confine myself in the main to the influence of nutritious, palatable, wholesome and clean foods, both as a preventive and as a remedy.

If we accept the modern theory of specific infection in the etiology of disease, we should also accept its attendant theories, which may be briefly stated as follows: A perfectly healthy, well nourished organ becomes infected with any disease germ with great difficulty; in other words, it is self-protective. I shall not enter here into any details, concerning this theory, but only state it briefly. Granting this, therefore, it is self-evident that the food or diet must play a most important part in the prevention of disease. The normal condition of the body, or any organ of the body, and hence its maximum power to protect itself against infection, is directly dependent upon the character and the amount of diet. It follows then as a necessary conclusion that the debasement of the diet, the addition of injurious substances thereto, or the abstraction of valuable ingredients therefrom, diminishes the power of that diet to maintain the body in a state of hygienic equilibrium. Hence, the normal condition follows when foods are furnished of a proper quality, assuming as a basis of the discussion that such foods shall not be so manipulated as to incorporate with them an ingredient injurious to health; to take from them any quantity of their nourishing properties which would unbalance their nutritive value; or to treat them in any manner so as to impair their power to sustain life.

The second condition regarding diet as a prophylactic is its quantity. It will be easily understood from the assumption of the basis of discussion that the proper quantity of food to maintain the equilibrium is a condition of efficiency. If less food than is necessary is ingested the body must lose a portion of its sustenance and a part of its ability to withstand infection. On the contrary, if a larger quantity of food is ingested than is necessary, an additional burden is placed upon the organs of digestion in ridding the body of the excess, or of storing the excess of nutriment in some form, usually that of fat, in the tissues of the body. Either condition must be regarded as unfavorable to complete prophylaxis and hence either a deficiency or an excess of food would to that extent predispose to diseases of the kind mentioned. It is of course understood that

these variations within ordinary limits are not of any appreciable effect. If on one day a person should eat a little less food than necessary for normal nutrition, and on the next eat a little more, varying in this way from time to time, no appreciable effect would be noticed. On the other hand, the person who continuously uses less food than is necessary, or one who continuously uses more than is necessary, must to that extent become more obnoxious to disease. In the second place, assuming that the total quantity of food remains the same, any marked and continuous change in the relations of its natural constituents must be looked upon with suspicion.

The normal food of man, and of other animals as far as that is concerned, may be divided into five great classes, namely, protein, fat, sugar (starch, etc.), minerals, and waste or indigestible portions. Each of these constituents has a useful function, and the sum of nutrition is the normal ingestion of all of these ingredients in their usual proportions. Here again it must be acknowledged that slight variations in distribution of ingredients may take place without any notable injury, just as is the case with the variation of total amount of nutriments. But if one essential ingredient to which the human body is accustomed, and on which it has been developed to its present state of normal equilibrium, should be persistently removed from the food, in my opinion the ultimate power of resistance to disease of mankind would be diminished. It is well known, for instance, that a diet of protein alone will speedily lead not only to the danger of infection but also to positive weakness and starvation. In like manner a diet of carbohydrates alone would result in the same condition, and this is true of a diet of fat, or a diet of the mineral constituents, or a diet of the waste constituents. I take it as a proposition very difficult to disprove, and sustained by every principle of analogy and reasoning, that the ordinary normal diet of man, selected by the necessities of nutrition and by taste, is considered all in all the best. To illustrate more particularly, I heard the surgeon general of the Japanese navy, in a lecture in Washington about two years ago, ascribe the disease known as beriberi to a carbohydrate diet. Rice being one of the principal foods of the Japanese, and almost the only food of the poor, the surgeon general ascribed the prevalence of beriberi among the Japanese, especially the Japanese sailors, solely to the use of

that diet. On the other hand, it has been thought that scurvy is a disease due largely to the elimination from the dietary of the vegetables that are eaten in the normal condition of nutrition. These two illustrations, which are more or less founded upon observation and scientific investigation, I think may be accepted as at least indicative of what might be expected should any usual elements of the diet be either increased or decreased proportionately to the other elements.

Among other statements which have been made in this line by most eminent men, and those whose scientific learning and judgment we all respect, is the one that the normal diet of man, especially in the United States, contains too large a percentage of protein. Data have been collected in an experimental way which tend to show that a diminution in the amount of protein in the food leads to very beneficial results, increasing the strength and endurance of the subjects experimented upon. It is true that this conclusion has also been questioned by high scientific authority, and so we may regard it at the present time as neither established nor disproved by scientific data. Applying the principle of analogy to this condition of affairs, we may properly ask if a diet so low in protein should be continued for a long period of time, whether some notable injury would not be done to the human body which would render it more obnoxious to disease. In fact, might we not expect an approach to that condition of affairs already alluded to in the case of the beriberi of the Japanese sailors? Might not there be other effects also not immediately noticeable which would render the general introduction of a diet in the United States containing, for instance, only half as much protein as that already consumed, dangerous to the general health of the community? I ask this without in the least calling into question the fact that the actual amount of protein which we consume may be greater than is desirable. In that case we would expect that the human body would be subject to other diseases, especially of those organs which are called upon particularly to excrete the protein, or its decomposition products, from the body. In other words, if, for the sake of illustration—and the figures are somewhat exaggerated—we should assume that the normal, healthy man of the United States, at the present day, consumes twenty grammes of nitrogen per day in the form of protein and the man under the proposed regime only ten grammes,

would the new order of affairs produce a race of men less subject to disease than the present one? We might all admit that the reduction of the quantity of nitrogen from twenty to eighteen grammes might be desirable, but would not be inclined to go to the extreme of supposing that it should be diminished by one-half or two-thirds, or even more.

I need hardly refer here to another question in respect of whole-foods in their relations to health, namely that of mastication. I believe that all admit the desirability of mastication, both as a mechanical necessity preliminary to deglutition and also preliminary to the proper mechanical state for the first steps of hydrolysis in the process of digestion. This having been properly accomplished, the question may arise whether or not the carrying of mastication to excess might result, first, in diminishing the actual quantity of food necessary, and second, to actually interfering with the proper process of digestion. Since the beginning of the human race, and before, the sense of hunger has been the normal gauge of the quantity of food ingested, and I think it must be admitted, if we believe in the principles of evolution, that this sense of hunger has fixed properly the quantity of food necessary. We need not discuss those abnormal cases where the natural sense of hunger leads to overeating, or where its absence leads to undereating, but I speak only of the average normal condition. I believe it may be accepted that excessive mastication, therefore, would tend to satisfy the sense of hunger with a less quantity of food than is needed in normal conditions. Let me put the case a little differently: Normal man must masticate his food in a manner whereby it can be easily swallowed, and this fits it for the ordinary process of digestion. If a man should excessively chew his food it seems to me that it is almost certain that a less quantity of it would satisfy his craving, in other words, a man who gives his whole attention to mastication must necessarily in a short time lose the sense of hunger—in a much shorter time in so far as the quantity of food is concerned, than he would otherwise. Hence, while it is perfectly easy of demonstration that a somewhat more extensive degree of comminution of the food may be desirable, it does not hold that it should be carried to extremes, or putting it another way, speed of digestion is not to be regarded as synonymous with nutritive digestion. I think it may be easily understood that just the contrary would be the case.

Suppose, for the sake of argument, that mastication could be continued until the food was reduced to its molecular condition. Such food, we might assume, would be digested almost instantaneously, but if the absorbent system remains in its present condition it would be quite impossible for that food to enter the circulation in an instantaneous manner. Much of it would necessarily, in the natural motion of the intestinal organs, soon pass beyond the region of absorption and escape entering into the nutritive processes entirely. Thus I venture to ask the question whether it may not be possible that excessive mastication, that is, converting the meal hour into a mere mechanical exercise, may not in the end threaten the human family with grave dangers of insufficient nutrition? I ask this question without in the least denying the principle that mastication is a desirable and necessary process.

I come now to the second part of the discussion, that is, a condition where disease has already become established. What now is the function of food respecting its therapeutic value? Every physician recognizes the necessity of sustaining to the utmost the vegetative functions of the body in disease. Disease, as it usually is found, may be defined as that condition of metabolism in which catabolism is more active than anabolism. In another sense the contrary is true and the excessive production of tissue, especially of adipose tissue, is in some respects just as much a disease as the loss of weight, which we usually associate with most diseases. In my opinion the disease which results in hypertrophy may, as a rule, be entirely controlled by diminishing the amount of the diet, unless it has gone so far as to be practically irremediable. The excess of activity of anabolism is associated very frequently with advancing years. The habit of eating becomes fixed in childhood, youth and manhood, that is during the period of growth and maximum activity of life. When senectitude approaches, if the habit of eating remains unchanged, larger quantities of food are ingested than are required for the new conditions that attend incipient old age. There is thus an accumulation of tissues which may become of a character conditioned upon an actual derangement of nutrition. On the other hand, the condition usually found in disease is the activity of catabolism. The moment the temperature of the body rises above the normal, catabolism gains the ascendancy. This is based upon the plain laws of thermodynamics. The waste of tissue which is the

attendant of disease often becomes so great as to threaten and even actually cause the death of the patient. To combat this condition, and stimulate anabolism, food of a proper kind is one of the most valuable of the armaments of the physician. But in this condition we have an entire change of relations. The natural desire for food usually has passed away. The character and activity of the digestive ferments are changed. There is often actual disease of the digestive organs themselves, and when not actually diseased their activity is so impaired by the disease of other organs that they cannot be treated as in the case of health. Hence the use of food in disease is regulated by entirely different conditions from the use of it in health.

I may say that the introduction of drugs of any description into foods which are intended for invalids is not only undesirable, but in my opinion, criminal. Let me illustrate this by a simple statement: Among all the foods which are proposed for conditions of disease there is none which is so valued as milk. The value of sweet milk as a food, even in a state of health, depends largely upon its purity and freshness, and in a state of disease these two qualities are absolutely imperative. The healthy man may use considerable quantities of milk that contains millions of organisms per cubic centimetre, or milk preserved with formaldehyde, boric acid, sodium benzoate, or other preservative, and receive no apparent injury; but the case is entirely different with the invalid. The ingestion of even minute quantities of these bodies, or of old milk not yet sour, may, and probably does, induce positive injury. Even pasteurized milk may be undesirable, especially in the case of infants, as has been illustrated by the reports of many physicians. The healthy adult, in my opinion, can drink pasteurized milk with impunity, provided the milk was good when pasteurized and did not need pasteurizing, but the same good milk, pasteurized and used in a state of disease might be open to serious objections. Another illustration: Physicians often prescribe fresh fruit juices for invalids and convalescents. The fresh juices of the apple and of the grape are those usually employed. About a year ago Judge Morrow, of the Federal Court of San Francisco, came to my office on his way home from Germany. While there his physician had advised him to drink fresh pasteurized apple juice, and he had done so with great benefit. He came to see me to ask me where he could get fresh, pasteurized, unchemicalized apple juice in this coun-

try. I reluctantly told him that I did not know; that my experience in buying fresh apple juices on the market had led me to believe that they were almost universally dosed with some antiseptic, either salicylic acid, sodium benzoate, or sulphurous acid. He said his physician had told him to avoid all such mixtures. At the present date, however, I can say that matters have improved very much. Large quantities of fresh apple juice and fresh grape juices are now placed upon the markets without the addition of any chemical whatever, and they are preserved in a much more palatable and much more salable state than ever before. This is illustrated by a letter I have recently received from a manufacturer of fresh grape juice at Sandusky, Ohio, which is as follows:

“SANDUSKY, OHIO, March 25, 1909.

“We wish to state that the three barrels of grape juice which you and our Mr. Appel had sealed last October kept in first class condition, as did also our entire output, and we are pleased to advise you that with the exception of a small stock of sulphur grape juice still on hand, which we are placing in a limited section of territory, that we have withdrawn the sale of sulphur juice altogether from the market, and are now offering nothing but the absolutely pure article.”

The first requisite which we should make for foods for invalids is that they should be pure. The next most important thing is to find a pure food which the invalid can digest. You cannot furnish an invalid *vi et armis*. You must find out what he can eat and give him that, whatever it may be, and if the digestive organs themselves are diseased, a greater care must be exercised. Very often sick people have an irreconcilable antipathy to articles of which when they are well they are frequently very fond, and this idiosyncrasy of the invalid must be respected by the physician. It has frequently been observed in cases of low nutrition that sour milk, or kumyss, may be taken with relish and with benefit when other forms of food seem to be rejected. I am not a protagonist of the belief of Metchnikoff that sour milk is the elixir of life. A theory of this kind would have to be demonstrated, and it would take a hundred years to demonstrate it. But even from theoretical considerations the theory does not appeal to me, and I am not going to discuss it here. In my limited experience at the bedside of the sick, as physician or friend, I have seen some excellent results from the use of kumyss. In my opinion

the physicians of this country should undertake to promote the manufacture of pure kumyss, and I do not mean by that that it shall be made of mare's milk as it originally was, nor do I use the word in the strict sense of the Food and Drugs Act—I mean good milk fermented in a bottle, or in other words "lacteal champagne." This is only mentioned, however, as one of the things that might be more properly prescribed in conditions where inanition is often a greater danger than the disease itself, and here I am led, in the kindest of spirits, to remark that the science of nutrition is unfortunately not very extensively included in the curricula of our medical schools.

I must also be allowed to say that the most preposterous dicta that I have ever heard concerning diet have come not from teachers of dietetics and cooking but from physicians themselves. In the progress of medical education the near future, in my opinion, will see the professorship of dietetics in a medical school advanced to the same rank as that of medicine, and I am even going further than this and say that the practice of medicine in the future will be largely a practice of dietetics.

When I sat down to write this article I had expected to apply the principles which I have tried to lay down to some particular disease, and especially did I have in mind tuberculosis, but I have used up the time allotted to me, and I have not even opened one of the ten leading authorities on dietetics which I had marked and placed upon my desk. I shall leave this for another time. I simply want to say that I believe it is now acknowledged by physicians that the treatment of tuberculosis is largely conditioned upon the diet. Here is one of the cases where apparently

"While the Bauch holds out to burn  
The lowest lunger may return."

I have the greatest faith in the future of prophylactic medicine and perhaps the day will come when the physician will be paid in proportion to the effectiveness of prophylaxis. While it is true that diet is only one of the factors in prophylaxis, as well as in therapeutics, it is, in my opinion, one of the most potent factors; and undoubtedly a symposium, such as that of today, in which all the various points of view relating to diet are prominently brought out, cannot fail of doing effective work for good.—*New York Medical Journal.*

## DEVITALIZATION OF THE DENTAL PULP.\*

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BY DR. W. A. LEGGO, OTTAWA.

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The discovery of the devitalization of the dental pulp, its successful removal from its former occupied space, the canal rendered aseptic, and filled with a non-irritating material, under aseptic conditions, assisted greatly in bringing about a great evolution in dental science.

The only remedy in the early days of an inflamed dental pulp was to extract the tooth, but today pulps in almost any pathological conditions may be successfully treated, the canals filled and allowed to continue on subserving nutrition.

My paper today, however, is not to deal with the treatment of pulps in any other pathological condition except those that necessitate devitalization.

At the outset it seems to me quite in order to ask the question, *What is the Dental Pulp?*

The pulp is a tissue somewhat modified in structure, enclosed within unyielding osseous walls, which in health form its sure protection, and in disease its rigorous prison house. It is composed of a gelatinous matrix which is traversed by blood vessels and nerves, which divide and subdivide throughout. It is devoid of the lymphatic system, this duty supposed to be performed by the veins.

Its vessels are unlike those found elsewhere throughout the body, except in the brain, being devoid of its muscular coat.

*How is devitalization produced?*

1. The most common method, arsenic.
2. Cocaine pressure.
3. Under the influence of an anaesthetic.
4. By sprays of ethyl chloride.
5. In single-rooted teeth sometimes the pulp may be rapidly destroyed by notching the tooth on lingual and labial sides with a stone, cut the excising forceps, and rapidly driving in an orangewood stick, having it previously conformed to the shape of the canal. This I will admit is a most heroic method, but works out where the case

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\*Read before the Eastern Ontario Dental Association at Morrisburg, July, 1909.

necessitates the removal of the tooth and a pivot crown inserted in its stead.

*How are pulps destroyed by arsenic?*

The pulps become highly inflamed as a consequence of the irritation, and take on a condition known as hyperaemia; on account of the modified structure of the blood vessels they easily distend their coats. The blood, coming in at the apical foramen through the arteries, becomes so distended as to press against the veins, at this juncture prohibiting the return of the blood, at least to a great extent, blood stasis is produced and the pulp becomes devitalized by strangulation or starvation.

*Cocaine pressure.*

A very satisfactory method in most cases; but one, if resorting to this method, must be careful to diagnose the attending conditions correctly and treat them accordingly; for instance, if you have an inflamed pulp in a bicuspid or molar, taking the molar for example, one may find the lingual branch vital, while the buccal branches may contain pus or a case of dry gangrene filled with inert micro-organisms. Pressure anaesthesia in this condition would only add to the complexities of the case. However, if one desired to use the pressure one might cement over the buccal branches and remove lingual branch without further complication.

Before further commenting upon cocaine pressure, I will explain the method by which I produce best results.

Remove all decay, at least as much as one can, with as little pain as possible to patient; place in a portion of  $\frac{1}{8}$  grain cocaine hydrochlorate tablet in the cavity, which will partially dissolve, then add quantities of solution adrenalin and alcohol C. P.; take a piece of gutta percha or unvulcanized rubber, and with aid of warm burnisher seal edges of the rubber to prevent the escape of the liquid, and begin gradual pressure, which in most cases will produce insensibility. During the entire operation care should be taken not to force the cocaine beyond the apex, as it may result in prolonged soreness. The sensibility may be tested from time to time during the operation.

In cavities extending to gum margin on either lingual or buccal surfaces of the tooth, I find the ivory matrix and holder of valued assistance in forming the missing wall, thus facilitating the operation by pressure in preventing escape of the solution.

Cocaine pressure, however, has its difficulties, and these are met with in cases where one finds pulps ossified or pulp nodules or large deposits of secondary denture, which cling to the side of the canals. In those cases the pulps are usually removed with some pain to the patient, being the only method.

The general anaesthetic method is O. K., but usually too expensive to patient.

Sprays of ethyl chloride are successful to a large extent, but usually the shock is too great at beginning and will not be tolerated by the patient.

Arsenious acid, to my mind, is king of all the methods. It is not very painful when associated with other medicinal agents, and when used with the fiber as placed upon the market does not endanger the tissue when the cavity is near the gum margin to the same extent as a devitalizing paste, the paste being so liable to escape when one endeavors to seal it in with the temporary stopping.

I have obtained best results by first washing out the cavity of the afflicted tooth with warm H<sub>2</sub>O, then carefully dry out same with absorbent cotton, being careful during the entire operation to prevent the saliva from penetrating it; this done, I allow a saturated solution of cocaine and acid carbolic to remain over the pulp for a few minutes; afterwards I place in a little more carbolic acid and follow with hot air syringe. I find this greatly diminishes the pain, and by continued drying of the cavity and careful excavating of the decay, I usually gain an exposure, and with the escape of blood from the pulp I know the fight is over; blood pressure is relieved, the nerves therein soon become dormant, at least to a great extent; the patient is relieved, and comfort is once more obtained. I positively at all times try to gain an exposure. This done I apply.

R. Fiber.

Opium ..... 2½%

Sulph. Morphine..... 2½%

With arsenic, creosote, oil of cloves and cassia.

This being the formula of the devitalizing fiber placed upon the market.

Speaking about the dangers of arsenic, I am informed by an expert chemist that the solubility of arsenic is as follows:

1 in 100 cold H<sub>2</sub>O.

10 in 100 warm H<sub>2</sub>O.

5 in 100 glycerine.

Which goes to show that it is not very soluble and is one point in its favor. I am willing to admit that the anatomy of the tooth is such, if it were very soluble, it would be a crime to use it in any case, as the solution could easily penetrate the tubules from the pulp, afflict the periodental membrane, and possibly result in necrosis of a large part of the maxilla; but, not being very soluble, and use in small quantities, I fail to see why it should be condemned.

While I have given you the old theory regarding the death of the pulp by strangulation, stasis produced, etc., I wish to state that to my mind the nerve tissue must come to its death by partial absorption of the arsenic. Believing this, I make it a practice to be careful in the amount used, and thoroughly cleaning canal with warm water previous to using any medicinal agents, as H<sub>2</sub>O<sub>2</sub> and others, in molars particularly, the cleansing being done after the arsenic has been used and the pulp withdrawn.—*Dental Practice.*

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### THREE POPULAR DENTAL FALLACIES.

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BY H. C. SEXTON, D. D. S., SHELBYVILLE, IND.

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#### FIRST FALLACY—THAT CEMENT IS THE BEST PRESERVATIVE OF TEETH.

This fallacy is a new one. We never heard of it until the inlay enthusiast, looking about for arguments for his own justification, formulated it, and has since been preaching it most assiduously. In former years cement was considered but a temporary filling to be relied upon for six months or a year, but no longer. Since the margin of the inlay is still cement it would seem that its limitations still held to some degree, at least.

The inlay has been spoken of as a protected cement filling. The cement is protected, but the protection is at the point where it is least needed. Let the margins of a filling be made of gold foil, then fill in the center of your plug with cement and you have what reason might call a protected cement filling.

The assertion that cement is the best preservative of teeth reminds one of the old classic sophistry propounded by Montaigne:

“Westphalia ham makes one drink; drink quenches thirst; there-

fore Westphalia ham quenches thirst."

The gold inlay is a great advance for the profession. It has come to stay because it has great merit, but its merit lies exactly in inverse proportion to the amount of cement exposed. The perfect inlay exposes none.

Then in advocating inlays, let us not resort to sophistry. The inlay doesn't need it, and by such usage we belittle our own intelligence. So when an enthusiast tells you that cement is the best known preservative of teeth, just wink your eye and take his statement *cum grano salis*.

**SECOND FALLACY—THAT THE PROFESSIONAL SPIRIT AND GOOD BUSINESS SENSE CANNOT GO HAND IN HAND.**

Some men who have arrived at the age of 45 or 50 without having laid by a dollar for their old age, take great pleasure in hugging this thought to their souls. It explains their failure in a most complimentary way; but it is a most deplorable fallacy—deplorable in that younger men may believe it and act upon its suggestion.

The man who at middle age or past faces the future years of his decline with no store of honey at his back, should not fall into the error of regarding himself as a martyr to the professional spirit. Let him be honest and acknowledge that he has been lacking in industry, concentration or self-denial.

To save money requires often the highest powers of intellect and manhood. Weaklings are never savers. To succeed one must not only strike the iron while it is hot, but he must strike it often enough to make it hot. To do this requires will power of the highest grade.

The greatest genius that ever lived—Shakespeare—was an excellent business man. Let us not forget that. He relied upon a fortune that he had saved through toil and self-denial for many years.

No student of biography can believe that greatest of spirit, greatness of energy, greatness of heart make for failure, even money failure. They make for success every time. 'Tis folly to hold that richness of soil works only toward poverty of crops. Were it true, then the world were the devil's, indeed.

**THIRD FALLACY—THAT QUACKERY IS A GREAT MONEY MAKER.**

This fallacy is first cousin, nay, full brother, rather, to the belief that drinking whiskey makes a strong man. Ask a surgeon which he

would rather have for a patient in a desperate operation, a total abstainer or an habitual drinker, and he will tell you, "The abstainer, every time." In like manner will the wise dentist say: "Give me an ethical practice, a practice in which all is honest, open and above board; a practice of which I can be proud."

Quackery consists of claims to superiority, or claims to cheapness, or both. Now a personal claim to superiority, even if strictly true, makes a man a snob; if untrue, it makes of him a liar. Between snob and liar let him take his choice. A claim to cheapness will in the end, sad to say, make of the claimant a cheap man—cheap literally, figuratively and professionally.

Either of these claims will drive the better class of patients away from you. The intelligent class will resent snobbery and lying. The wealthy class will resent cheapness. What have you left? The unintelligent and the poverty-stricken. Would you not rather have your practice composed of the intelligent and wealthy? An ethical man may achieve such a practice; a quack never can.

Then, moreover, and mind this, quackery hurts the quack; hurts his very ego. You know a man cannot constantly tell or act lies without suffering degeneration in the very fiber of his moral being.

That is the worst of quackery. A man degenerates under it as he does under the drinking of whisky. It was of quacks that the man was thinking who said: "The more I see of men the more I love my dog."

But, you say, a man may make a great deal of money out of the less desirable people. If he can do so then it proves him a very, very strong man. Most men go to pieces in the attempt. The quack who has had force and energy to be a financial success would have had a much greater success had he not been burdened with the incubus of quackery which, like the old man of the sea, has been slowly throttling him, bearing him down, down, down.

If this be true, then why are a certain percentage of all professions quacks, for even the ministry is not free, I fear. Oh, some men in the process of evolution have not yet arrived at the stage of thinking animals. So, why expect a man to think when in his make-up he does not possess the conveniences for thinking? In other words, great truths are like mirrors, if an ass looks in you cannot expect an apostle to look out.—*Dental Summary.*

## OBITUARY

On Saturday, August 21, 1909, there died at Youngstown, Ohio, one of the old and well-known landmarks of the dental profession, Dr. Frederick Shively Whitslar, a resident of that place, aged nearly 85.

Dr. Whitslar was not only one of the able pioneers of dentistry, but a remarkable man in many respects. In his youth he was bound out to farm work. As a young man he taught schools in the old log school houses of the early days of Ohio, and later took up dentistry and was a self-made man. He engaged in practice over fifty years, and was a writer of many articles for dental magazines, which at one time gave him national reputation. He was a member of the American Dental Association, of Delta Sigma Delta Fraternity, was president of the Northern Ohio Dental Association, and of the Western Pennsylvania Dental Association; also of the Mahoning County Dental Association, and was a member of the State Dental Society of Ohio. He was an elder in the church and was connected actively in missionary work, and was charter member and organizer of the City Library Association. Elder Whitslar married Miss Matilda Fox on March 4, 1849, at Canfield, Ohio. She died in October, 1898. There were born to them three children—W. H. Whitslar, D. D. S., of Cleveland; Grant S. Whitslar, of Youngstown, and Mrs. Allie W. Carr, who made her home with her father, all surviving.

Dr. F. S. Whitslar was a soldier in the civil war, being mustered out a captain of the 155th regiment, Ohio Volunteer Infantry. Capt. Whitslar performed gallant service, and was commended by superior officers for bravery and meritorious conduct. Before the war he was active in politics, and was an anti-slavery advocate, and assisted many slaves to escape by the "Underground Railroad." He was the first president of the Youngstown city council.

The present generation of dental practitioners, while many remember the elder Dr. Whitslar, are more familiar with his son, Dr. W. H. Whitslar, of Cleveland, who has for years been active in all important dental affairs, and is now president of the State Dental Association of Ohio.

## MISCELLANEOUS

### WARM THE ALCOHOL BEFORE WIPING OUT A CAVITY.

It affords considerable and pleasing relief to patients if, when wiping out a cavity in a vital tooth with alcohol, the alcohol is warmed. This may be easily and almost instantly done by igniting the saturated swab and quickly blowing it out.—*Northwestern Dental Journal.*

### THE CUSPS THAT SUFFER.

In my practice I find that it is usually the lingual cusps of the right upper and left lower teeth and the buccal cusps of the left upper and right lower teeth that suffer the most, indicating that the majority of cases that have come under my observation habitually grind their food with from right to left movement. This may be but a coincidence, but it is an interesting one and one that will bear further observation. But in every case involving any considerable portion of the occlusal surfaces of bicuspids and molars it is wise to carefully note this particular form of stress, and then protect any weak cusps that may have to bear the brunt of that stress. Failure to do so will invite the destruction of a cusp, an accident that is peculiarly unfortunate, as it nearly always means the loss of the crown of the tooth.—*Dr. J. V. Conzett, Digest.*

### HOW LONG TO WEAR A PLATE.

The statement is made that "plates should not be worn over five or six years." This is true of vulcanite but not of all metal plates. I expect a continuous gum denture to last at least 20 years and have seen scores in wear 25 years and upwards. One of the first I made, 55 years ago, I saw in wear 40 years later. Two years ago I made a set for a lady 80 years of age, who was wearing a set I made her 45 years previous. Old as she was, she would have nothing different. A few years ago I visited an old patient in Boston, who was wearing a set of gold she had 50 years. I was surprised to find what good condition the jaw was in. The temporary plate should never be worn over two years, as excessive absorption takes place.—*Dr. L. P. Haskell, Review.*

**CHLORO-PERCHA, FOR FILLING PULP CANALS.**

I wish to go on record as condemning chloro-percha as a pulp canal filling. It shrinks on itself, leaving the walls of the canal, making a space which gradually fills with fluid inviting all kinds of trouble. It has absolutely no therapeutic properties and is merely a substance for filling canals that does everything we don't want it to do.—*S. M. Weaver, Dental Summary.*

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**DIGNITY OF PROSTHESIS.**

We are all coming back to prosthetic dentistry. It does not matter so much who does the work, you yourself, or the laboratory men, provided that it is properly done. Operative dentistry has in my opinion made the least progress, unless progress means the stuffing of a hole full of something. There has been no real effort to restore from an artistic standpoint the lost portion of a tooth. The introduction of mechanical laboratories is a big mistake, but there will come a period when this branch will be put on a proper basis. Dentistry will be divided up. No one man can begin to digest and make use of all the good things that are offered to us—*Dr. Van Woert in Items.*

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**THE HARVARD COMPANY 1910 CATALOG.**

We acknowledge receipt of the Harvard Company (Canton, Ohio) 1910 catalog. We express our pleasure in seeing a dental catalog so replete in the engravers', printers' and literary arts as this magnificent work shows. It is a revelation of knowledge mechanical and electrical, concise and valuable to the practitioner of dentistry and makes plain to the reader many of the wonders of these arts which ordinarily require long search through the special technical works. The book really is a description of the goods of Harvard manufacture written in detailed explanation of all the "whys" and "wherefores" and made so plain that all can understand the very subjects desirable to know without burdening the mind. We certainly congratulate The Harvard Company, in this departure from the old lines of catalog making.



## MEETINGS

### INDIANA STATE BOARD.

The next meeting of the Indiana State Board of Dental Examiners will be held in the capitol at Indianapolis Jan. 10 to 14, 1910. All applicants for registration in Indiana will be examined at this time. For further information address the secretary,

F. R. HENSHAW,  
507-8 Pythian Building, Indianapolis.

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### ILLINOIS STATE BOARD.

The annual meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice Dentistry in the State of Illinois will be held in Chicago at the Dental Department of the University of Illinois, cor. Honore and Harrison sts., beginning Monday, November 8th, 1909 at 9 a. m. Applicants must possess the following requirements in order to be eligible to take the examination.

The following preliminary qualifications shall be required of candidates to entitle them to examination by this Board for a license to practice dentistry in the State of Illinois: Graduates of a reputable dental or medical school or college, or dental department of a reputable university who enter the school or college as freshmen on or after the school year of 1906-7, must have a minimum preliminary education of not less than graduation from an accredited high school or a certificate from the State Superintendent of Public Instruction, equivalent officer or deputy, acting within his proper or legal jurisdiction, showing that the applicant had an education equal to that obtained in an accredited high school; which certificate shall be accepted in lieu of a high school diploma.

Candidates will be furnished with proper blanks and such other information as is necessary on application to the secretary. All applications must be filed with the secretary five days prior to date of

examination. The examination fee is twenty (\$20.00) dollars with an addition fee of five (\$5.00) dollars for a license.

Address all communications to T. A. Broadbent, Secy., 705 Venetian Bldg.

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**THE G. V. BLACK DENTAL CLUB.**

The members of the G. V. Black Dental Club (Inc.) will hold their midwinter clinic in St. Paul, Minn., February 24th and 25th, 1910. For further particulars, address R. B. Wilson, Secretary, 409-10 American National Bank Building, St. Paul, Minn.

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**Michigan State Board of Dental Examiners.**—The next regular meeting of the Michigan State Board of Dental Examiners for the examination of applicants for registration in this state, will be held in the Dental Department of the University of Michigan at Ann Arbor, beginning Monday, November 15th, at 8 a. m. and continuing through the 20th. Applications must be in the hands of the secretary at least 5 days previous to the examination. Application blank and copy of the rules can be had by addressing the secretary, A. B. Robinson, secretary-treasurer, 44 Sheldon Street, Grand Rapids, Mich.

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**EXECUTIVE COUNCIL N. D. A.**

A meeting of the Executive Council of the National Dental Association will be held at the Hotel Hollanden, Cleveland, O., at 10 o'clock A. M., Saturday, November 6, 1909, for the appointment of officers' sections, and the standing committees and the consideration of such other matters as may properly come before it.

Members of the Association having any business to present are requested to attend this meeting.

CHARLES S. BUTLER, Sec.                    BURTON LEE THORPE, Pres.  
Buffalo, Sept. 11.

## PERSONAL AND GENERAL

**Fire.**—Dr. M. D. Midd was a heavy loser in a fire which wiped out the greater portion of the business block of Adairville, Ky., August 18.

**Troublesome Teeth.**—The Young One: "Do your teeth ever give you any trouble?" The Old One: "Oh, yes; I mislay them sometimes."

**Fire.**—Damages to the amount of \$75 was caused by a fire in the office of Dr. A. R. Hammerles, Hamilton, Ohio. The fire was caused by a vulcanizer.

**A First Class Practice** is advertised in this issue, for sale in New York City. An exceptional opportunity for a first class man to immediately establish himself. See advertisement.

**Dentist Heir to Millions.**—Dr. Frank H. Gardiner, of Chicago, is said to have been left a part of an estate in England which totals thirty millions, by the death of a distinct relative in England.

**Dentist Found Guilty.**—A dentist of Watertown, South Dakota, was found guilty of practicing without a license, September 9. The action was brought about by several other dentists of that city.

**Derrick-Sayler.**—Dr. and Mrs. L. G. Derrick, who were recently married at Fort Dodge, Iowa, have returned to Green Bay, Iowa, the home of the doctor, where they will make their permanent home.

**Shiffler-Douple.**—Dr. V. G. Shiffler, who has a large practice in Lebanon, Pa., and Miss Sallie Douple, of the same town, were married September 14. The doctor and his wife will continue to reside in the same city.

**Fisher-Hart.**—Dr. Frank B. Fisher of Camden, Ohio, and Miss Elsa Hart of the same town were married at the home of the latter's parents October 9. Dr. Fisher has been a practicing dentist at Camden for several years.

**Fire.**—September 10 a blaze started in the office of a dentist, Shelbyville, Illinois, which resulted in the loss of about \$25,000. The loss to Dr. Damner, the dentist, was about \$2,000. The cause of the fire has not been ascertained.

**Resigns from Consular Service.**—Dr. B. Van Horne, a former dentist of Dayton, Ohio, has recently resigned from the United States Consular Service in South America and will practice in Buenos Ayres, Argentina Republic, South America.

**Wood-Wilson.**—The marriage of Dr. C. C. Wood, a dentist of Shreveport, La., and Miss Elizabeth Wilson was celebrated October 9, much to the surprise of their many friends. Miss Wilson is a teacher in the public school at Shreveport.

**Fire.**—The office of Dr. J. E. Darner of Shelbyville, Ill., was dam-

aged to the extent of about \$300, when a fire broke out in his office, September 13. It is said that most of the damage was due to the overzealousness of the fire department.

**Reciprocal Relations Made Between Ohio and Illinois.**—At a meeting of the state board of dental examiners of Ohio, at Columbus, Ohio, October 13, reciprocal arrangements were established between Ohio and Illinois, each state agreeing to accept the certificates of the other.

**Crawford-Patton.**—Dr. Rush P. Crawford, a dentist of Sullivan, Ind., and Miss Glenn A. Patton, of the same city, were married October 20 at the home of the latter's brother at Kokomo, Ind. Miss Patton is a graduate of Smith College and Dr. Crawford of University of Michigan.

**Dentist Wanders Away.**—Dr. Almon Cady, who has been a patient of the Toledo state hospital, Toledo, Ohio, for the last five years, wandered away while returning from dinner to his ward. The police have searched in vain for the missing patient, whose age is 66 years.

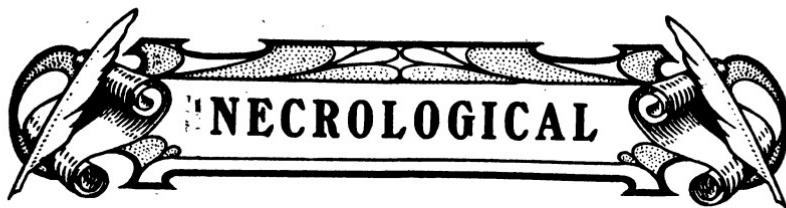
**Yager-Spreestersbach.**—The marriage of Dr. W. A. Yager of Charlestown, Ind., and Miss Henrietta Spreestersbach of the same city was celebrated October 21, at the home of the latter. The doctor has practiced in Charlestown for many years and is very popular with all the residents.

**Sells Gold Teeth for Railroad Fare.**—Upon hearing of the serious illness of his mother, George Severs, a dentist of New York, when he found that selling his instruments did not bring sufficient money for his expenses to San Francisco, sold his gold teeth to a Chicago dentist whom he persuaded to extract them.

**Dentists Practicing Illegally Are Arrested.**—Dr. F. H. Lyder, president of the state board of dental examiners, stated that the arrest of three Cleveland dentists on charges of illegal practice was not a part of any general campaign, but that they came in the course of the regular investigations of a representative of the department.

**Robberies.**—Drs. J. D. Bolt, Sapulpa, Okla., loss \$100.—E. D. McLaughlin, Greensburg, Ind., loss \$80.—C. B. Townsend, Wilkesbarre, Pa., loss \$150.—E. D. Lutz and E. E. Holmes of Boone, Iowa, loss \$200.—F. E. Fields, Sioux Falls, S. D., loss \$300.—W. A. Winters, Connersville, Ind., loss \$125.—C. R. Sullivan, Springfield, Mass., loss \$150.—J. C. Widenham, Jacksonville, Ill., loss \$100.—A. Holsom, Grinnell, Iowa, loss \$20.—Brock Bros., Grinnell, Iowa, loss \$50.—L. G. Lemley, Grinnell, Iowa, loss \$75.

**Dentist Stops Cars.**—Denying the right of the telegraph and the electric power supply companies to use his building as a prop for their wires, Dr. A. N. Stone of Elgin climbed the pole, despite his sixty-five years of age, and severed the wire there. Besides stopping the Elgin street cars, it entirely isolated the city from all outside telegraphic communication. The doctor had refused the company the right to string their wires on his building, but during his absence they disregarded his orders and attached their wires.



**Dr. Paul Davidson**, a very prominent dentist of Scranton, Pa., died October 1 at the age of 28 years. His death was due to paralysis, with which he has been afflicted for some time. The deceased was a graduate of the Pennsylvania Dental College, class 1907, and had since built up a strong practice, and was extensively known in his city.

**Dr. Geo. D. Billings**, one of the oldest residents of Medina, Ohio, died very suddenly of heart failure at his home October 6. The deceased was very prominent in the social and political circles of his town, having served as mayor several times, and a member of the local G. A. R. He was 68 years old and is survived by his wife and daughter.

**Dr. E. Yerkes**, a dentist of Philadelphia, Pa., was found dead at the home of his daughter, with whom he was visiting, on the morning of October 11, death being due to heart failure. He was 84 years of age and had formerly practiced in Philadelphia, but had lately retired.

**Dr. G. A. Sturtz**, a well known dentist of La Vegas, N. Mex., died October 10 at his home. The deceased had formerly resided at Marquette, Wis., but had been forced to seek a milder climate about two years ago. The remains were taken to the home of his brother at Sterling, Ill. The deceased was a graduate of the Chicago College of Dental Surgery, class 1896.

**Dr. R. J. Reed**, one of the oldest dentists of Newark, N. J., died October 11. The deceased was born at Baltimore, Md., and had gone to Newark when a young man and had resided there till the time of his death, which occurred in his seventy-fifth year.

**Dr. J. F. Siddall**, a retired dentist of Oberlin, Ohio, was drowned October 12 in a cistern at the rear of his home, into which it is believed he accidentally fell. He was one of the best known men of the town, having resided there for forty years, a greater part of which time he was engaged in the practice of dentistry. He retired several months previous to his death on account of his health, and was 76 years old at the time of his death.

**Dr. W. J. Whitsett**, a prominent dentist of Lebanon, Tenn., died October 19 at his home. His body was taken to Nashville, the home of his parents, for burial by a delegation of the Knights Templars, of which organization he was a member. The deceased was a graduate of the Vanderbilt University of Nashville, class 1900.

**Dr. L. S. Addison**, one of the best known residents of Chillicothe, Ohio, died October 9 at his home. He was born in New York and was a graduate of the Chicago Dental College. He had practiced dentistry for two years at Chillicothe and was 40 years old at the time of his death.

**Dr. C. S. Fry**, one of the pioneer dentists of Reading, Pa., died of a complication of diseases at the age of 71 years. He had been a resident of that city for almost forty years and had made many friends among the local dentists.

**Removals.**—Drs. W. T. Roland, from Dentonville, Ark., to Fort Smith, Ark.—A. H. Heim, from Sebewaing, Mich., to Fort Wayne, Ind.—A. J. Anderson, from Dallas, Texas, to Chicasha, Okla.—A. S. Young, from Shannon, Ill., to Galva, Ill.—H. Wands, from Rockford, Ill., to Chippewa Falls, Wis.—G. A. Roberts, from Quasqueton, Iowa, to Win-Chippewa Falls, Wis.—G. A. Roberts, from Quasqueton, Iowa, to Win-A. E. Wilkes, from De Kalb, Ill., to Hayne, Mont.—C. S. Kelsay and D. L. McCaw, from Portland, Wash., to Pasco, Wash.—E. Z. Hoag, from Florence, Wis., to South Milwaukee, Wis.—C. W. Hoover, from Chicago to Momence, Ill.—H. Hart, from Bowen, Ill., to Quincy, Ill.

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